EverFocus

User Manual

EMV200S / 400S

Portable / Mobile DVR

EVERFOCUS ELECTRONICS CORPORATION

EMV200S/400S

Portable/Mobile DVR

User Manual

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SAFETY PRECAUTIONS

Ventilation Slots: Do not block the ventilation openings or slots on the cover.

Limits for Temperature, Humidity and Power: Do not operate the device beyond its specified temperature, humidity or power source ratings. Do not use the device in environments with very high temperature or humidity. Use it at temperatures between -20~55ºC (-4~131ºF). The input power source for this device is 10~32VDC.

Servicing: Do not attempt to service this unit by yourself. Do not attempt to disassemble the device. Opening or removing covers may expose you to dangerous voltages and other hazards. There are no user-serviceable parts inside. Refer all work on this device to qualified service personnel. Handle the device with care. Do not strike or shake it, as this may damage the device.

Cleaning: Unplug the unit from the outlet before cleaning. Do not use strong or abrasive detergents when cleaning the device's cover. Use a damp cloth to clean the device when it is dirty. If the dirt is hard to remove, use a mild detergent and wipe gently.

Attached Devices: Do not attach devices that are not recommended by the manufacturer.

Power Outlets: Do not overload outlets and extension cords as this could cause fire or electric shock.

Power Cables: Power cables and their connectors should be placed where they are not likely to be walked on, crushed or pinched by items placed upon or against them.

Foreign Objects: Never push objects of any kind into this unit through openings as they may touch dangerous voltage points or short out parts, possibly resulting in fire or electric shock. Do not let any metallic parts drop through the slots, as this could permanently damage the device. If this happens accidentally, turn the power off immediately and contact qualified service personnel for support.

Liquids: Do not expose the device to water or moisture, and do not try to operate it in wet areas or near water – for example: near a bath tub, wash bowl, kitchen sink, or laundry tub, in a wet basement, near a swimming pool, in an unprotected outdoor installation, etc. Take immediate action if the device becomes wet. Turn the power off and refer servicing to qualified service personnel. Moisture can damage the device and can also cause electric shock. Never spill liquid of any kind on the unit.

Read All Instructions: All the safety and operating instructions should be read before the unit is operated.

Retain These Instructions: The safety and operating instructions should be retained for future reference.

Heed All Warnings and Follow All Instructions.

ATTENTION! This is a Class A product which may cause radio interference in a domestic environment. If it does cause interference, the user may have to take adequate measures.

Federal Communication Commission Interference Statement

This equipment has been tested and found to comply with the limits for a Class B digital device, pursuant to Part 15 of the FCC Rules. These limits are designed to provide reasonable protection against harmful interference in a residential installation. This equipment generates, uses and can radiate radio frequency energy and, if not installed and used in accordance with the instructions, may cause harmful interference to radio communications. However, there is no guarantee that interference will not occur in a particular installation. If this equipment does cause harmful interference to radio or television reception, which can be determined by turning the equipment off and on, the user is encouraged to try to correct the interference via one of the following measures :

•Reorient or relocate the receiving antenna.
•Increase the separation between the equipment and receiver.
•Connect the equipment into an outlet on a circuit different from that to which the receiver is connected.
•Consult the dealer or an experienced radio/TV technician for help.

FCC Caution: Any changes or modifications not expressly approved by the party responsible for compliance could void the users' authority to operate this equipment.

This Product is RoHS compliant.

WEEE

Your EverFocus product is designed and manufactured with high quality materials and components which can be recycled and reused. This symbol means that electrical and electronic equipment, at their end-of-life, should be disposed of separately from your household waste. Please, dispose of this equipment at your local community waste collection/recycling centre. In the European Union there are separate collection systems for used electrical and electronic product.
Please, help us to conserve the environment we live in!

The information in this manual was current upon publication. The manufacturer reserves the right to revise and improve his products. Therefore, all specifications are subject to change without prior notice. The manufacturer is not responsible for misprints or typographical errors.
Please read this manual carefully before installing and using this unit. Be sure to keep it handy for later reference.

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Chapter

1

1 PRODUCT OVERVIEW

Full-feature video surveillance in the palm of your hand:
The EverFocus EMV200S/EMV400S digital video recorder features a **built-in 3-axis G-sensor**, an external plug-in **GPS** module for location tracking, and H.264 compression for efficient recording and fast network transmission of recorded data.

The EMV200S supports 2 channels while the EMV400S supports 4 channels. The user can record real-time video and audio on each channel (up to 30/25fps per channel at D1 resolution). This device's compact size allows easy installation in almost any usage scenario; such as inside a vehicle, fast deployment at a temporary fixed site, or portable battery-powered surveillance.

This DVR provides multiple interfaces, including two USB ports, a wired Ethernet port, IR remote control, 2/4 alarm inputs and 1 SPDT (Form "C") alarm output. Featuring shock and vibration-resistant terminal block & D-sub connectors, this DVR is rugged enough for reliable operation even when the host vehicle encounters bumpy roads. Add to this a new, easy-to-read GUI that is specially designed for use with portable small-screen monitors, and you get a powerful surveillance solution in a small package.

Additionally, this DVR's power supply provides surge protection and voltage regulation. It also features SD card recording (only the 32GB SD cards from Transcend and Sandisk have been tested), speed reporting and 'virtual fencing' (using the embedded G-sensor and plug-in GPS module), as well as support for control via a hand-held IR remote controller, making it the best choice for applications that require 1~4 channel portable/mobile surveillance.

1.1 FEATURES

- 2/4 Channels of real-time D1 video and audio recording
- **Built-in G-sensor** and an external **GPS module** tracks speed, location and geographic limits
- Ultra-compact size for easy installation
- Recording Rate : up to 30/25fps per channel @ D1 resolution
- H.264 compression format for efficient storage and data transmission
- Special GUI designed for use with small-sized mobile/portable monitors
- Terminal block and D-Sub connectors (via harness adapter) for shock & vibration resistance
- Interface cables to BNC (video), RCA (audio) and power jacks supplied (these connect to the device via its D-Sub port and the provided D-Sub harness adapter
- Alarm Inputs supported: 2 for the EMV200S and 4 for the EMV400S
- Alarm Outputs supported: 1 (Form "C") – connect the Input lines and the Output line to a single DB9 male connector for plugging into the provided input connector – the DB9 female connector)

- Plug-and-play recording on a shockproof SD card that comes with a security cover (only the 32GB SD cards from Transcend and Sandisk have been tested)
- The user can simply take out the full SD card and insert an empty one, or export video through two convenient USB ports.
- USB ports enable the use of a USB mouse for easy setup, programming and playback/export
- Supports multiple interfaces: USB 2.0, DB9 (Alarm I/O), RS-232 (CAN Bus bridge), wired Ethernet, IR Remote Control, BNC (video), RCA (audio)
- Optional external EDGE/GPRS/CDMA/WI-FI modules available – for cellular/specialized wireless transmission
- Embedded 3-axis G-sensor
- GPS function tracks speed and geographic limits (via an external GPS module)
- Power Supply : 10~32VDC with surge protection, voltage regulation, programmable Delay ON/OFF for flexible control
- Temperature range : -10~55 ºC / 14~131 ºF (Operating), -40~85 ºC / -40~185 ºF (Non-Operating)

1.2 PACKAGE CONTENTS

- Digital Video Recorder x 1
- Screws x 1 pack
- IR Remote Control x 1
- Battery x 2 (AAA for the Remote Control)
- D-Sub adapter
  - Video Cables and Connectors (BNC-F) x 3 (x 5 for EMV400S)
  - Audio Cables and Connectors (RCA-F) x 3 (x 5 for EMV400S)
  - Alarm I/O Cable and Connector (DB9) x 1
  - RS-232 (CAN Bus bridge) Cable and Connector x 1
- External Plug-in GPS Module with 5m-long Cable x 1
- DVR Power Cable x 1

1.3 SPECIFICATIONS

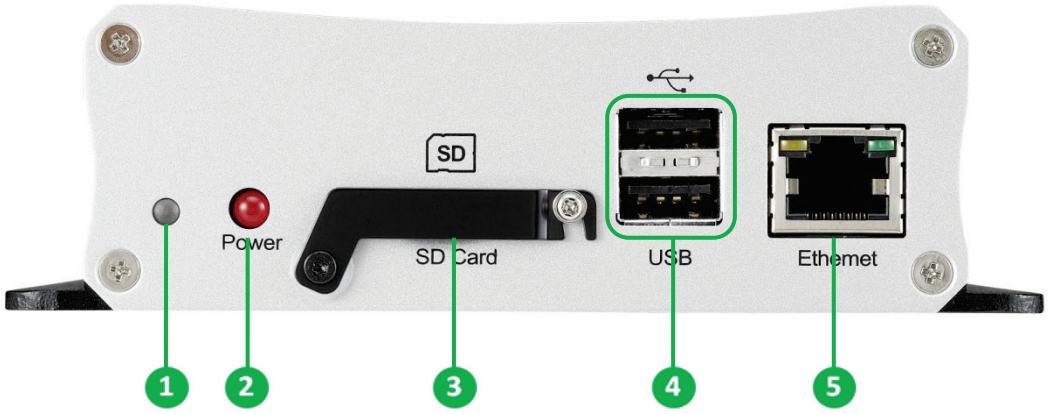
	EMV200S - 2CH Mobile DVR	EMV400S - 4CH Mobile DVR
Video Format	NTSC/PAL (auto-detected by system)	
Operating System	Embedded Linux with special small-monitor-friendly GUI	
Video Input	2 channels (via a vibration-resistant, screw-locked D-Sub harness adapter with BNC-F interface connectors)	4 channels (via a vibration-resistant, screw-locked D-Sub harness adapter with BNC-F interface connectors)
Video Output	Main monitor: 1 composite output – 1 Vp-p (via a vibration-resistant, screw-locked D-Sub harness adapter with a BNC-F interface connector)	
Video Compression	H.264	
Recording Resolutions **(Rate and resolution set independently per camera)**	NTSC: 704 x 480 / 704 x 240 / 352 x 240 PAL: 704 x 576 / 704 x 288 / 352 x 288	
Audio Inputs	2 lines in (via a vibration-resistant, screw-locked D-Sub harness adapter with RCA-F interface connectors)	4 lines in (via a vibration-resistant, screw-locked D-Sub harness adapter with RCA-F interface connectors)
Audio Output	1 line out (via a vibration-resistant, screw-locked D-Sub harness adapter with an RCA-F interface connector)	
Alarm Inputs	Supports 2 alarm inputs (via a vibration-resistant, screw-locked D-Sub harness adapter with a DE-9 connector)	Supports 4 alarm inputs (via a vibration-resistant, screw-locked D-Sub harness adapter with a DE-9 connector)
Alarm Outputs	Supports 1 alarm relay output – SPDT / Form "C" (via a vibration-resistant, screw-locked D-Sub harness adapter with a DE-9 connector)	
Recording Storage	1 SD / SDHC card slot with a tamper-resistant security cover plate **Note:** Only the 32GB SD cards from Transcend and Sandisk have been tested.	
Recording Rate **(Rate and resolution set independently per camera)**	NTSC: D1 = 60fps / 2CIF = 120fps / CIF = 240fps PAL: D1 = 50fps / 2CIF = 100fps / CIF = 200fps	NTSC: D1 = 120fps / 2CIF = 240fps / CIF = 480fps PAL: D1 = 100fps / 2CIF = 200fps / CIF = 400fps
	Each camera's recording rate and resolution can be set individually per camera via their OSD menus	
Recording Modes	Continuous recording, event recording, continuous + event recording (rate and resolution in each mode can be set independently per camera for each record mode)	
Record Quality	Select one of five quality levels per camera per record mode	
Pre-Alarm Recording	Optional; select from 5-second intervals	

Playback Rate	NTSC : D1 = 60fps PAL : D1 = 50fps	NTSC : D1 = 120fps PAL : D1 = 100fps
Playback Search	Time/Date and Event search	
Video Loss Detection	Yes	
Event Alarms	SD card error, SD card temperature, SD card full, SD card missing, power loss, network loss, GPS loss, GPS speed, GPS fencing	
Email Alerts	Multiple email notifications in response to selectable alarms and events	
G Sensor	Via embedded 3-axis G Sensor – data recorded and alarm triggered if configurable user limits for the X, Y or Z axes are exceeded	
GPS Function	External, plug-in GPS module for speed-limit and geographic-limit monitoring and alarms (rectangular or circular fencing)	
Configuration Method	On-screen-display menu with small-screen-friendly GUI	
Control/Setup	IR remote control, USB mouse, network interface	
Real-time Clock	Can be synchronized with GPS/NTP time source; flexible DST settings	
Watchdog Function	Reboots DVR automatically if required	
Networking	RJ-45 port, 10/100Mbps, TCP-IP/DHCP/PPPoE/DDNS/SMTP/SSL/POP3/HTTP/NTP	
Interfaces	Terminal block (RS232/Video/Audio/Alarm), GPS port, USB 2.0 port, LAN port, SD card slot, and IR receiver.	
Power Source	13.8 VDC / 27.6 VDC nominal; 10~32 VDC range (built-in surge protection, voltage regulation, programmable Delay On/Off relative to ignition or other switched voltage) **NOTE:** This DVR is SAE certified. A power surge of more than 32V DC can damage this product. Please check that the vehicle's power system does not create voltage values higher than this.	
Dimensions	131 (W) x 38.4 (H) x 164.4 mm (D) --- 5.2 (W) x 1.5 (H) x 6.5 inches (D)	
Weight	600g --- 1.32lbs	
Operating Temp.	Working Temperature: -10~55 °C; 14~131 ºF Storage Temperature: -40~85 °C; -40~185 ºF	

1.4 FRONT PANEL

Your primary interaction with your new DVR will be through the Front Panel buttons/ports and their corresponding buttons on the included IR Remote Control. Take a moment to learn where these features are as the remainder of the manual will refer to them often.

Front Panel:



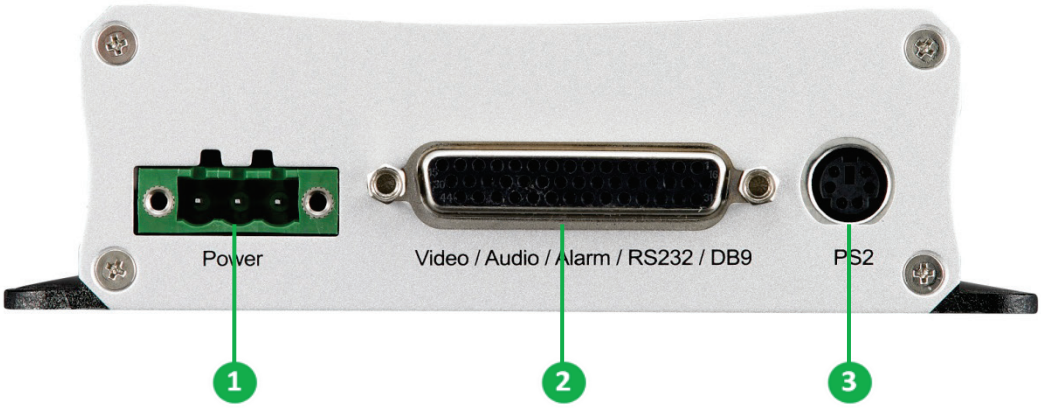
1 **IR Receiver**
2 **Power LED**
3 **SD Card Slot**
4 **USB Ports**
5 **RJ-45 Ethernet Port**

1) **IR Receiver:** Receives infrared signal from remote controller
2) **Power LED:** Lights red when DVR is receiving power.
3) **SD Card Slot:** Plug SD or SDHC memory card in here to record selected channels. Note that only the 32GB SD cards from Transcend and Sandisk have been tested. To remove the SD Card, please refer to *5.7.3. SD Card*
4) **USB Ports:** Plug USB devices like a USB Flash Drive or USB Mouse in here for recording data or controlling and configuring the device.
5) **Ethernet Port:** Plug your Ethernet cable in here to control the DVR via the Internet or your subnet/LAN.

1.5 REAR PANEL

During initial setup you will be connecting your DVR to multiple input and output devices. This is done through the rear panel.

Rear Panel:

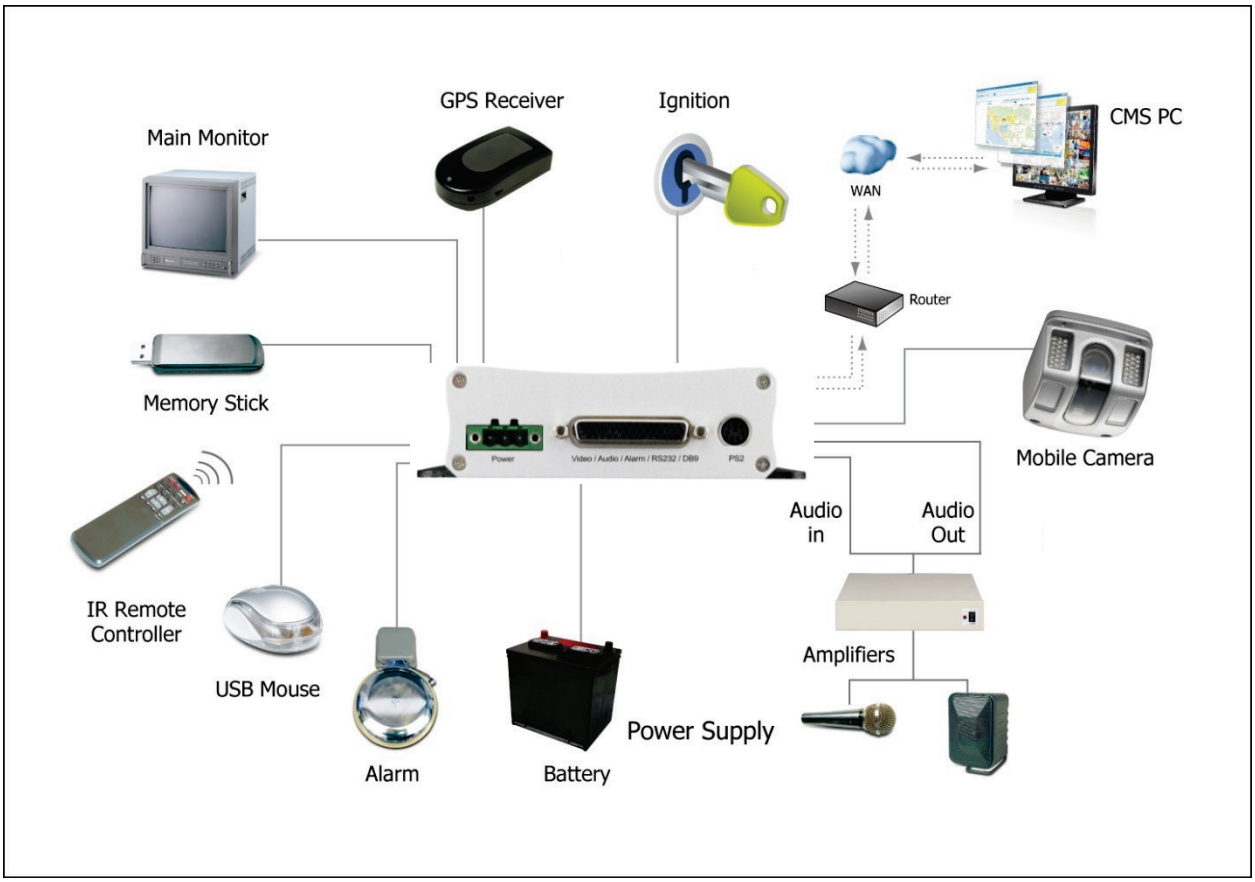


1. **Power Input**
2. **D-Sub Harness Adapter Port**
3. **PS2 Port**

1) **Power Input:** Connect to a 10VDC~32VDC power source.
2) **D-Sub Harness:** Plug the supplied D-Sub harness adapter in here. This adapter features many connectors that are designed to link to your video I/O channels, audio I/O channels, alarm I/Os, or RS-232 devices.
3) **PS2 Port:** This port can be used to connect the external GPS module.

1.6 CONNECTION DIAGRAM

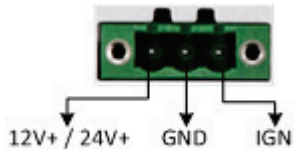
Note: *This usage scenario shows possible usage of the DVR. All peripheral devices must be purchased separately. See page 2 for package contents.*



1.7 REAR PANEL CONNECTORS / D-Sub Cable

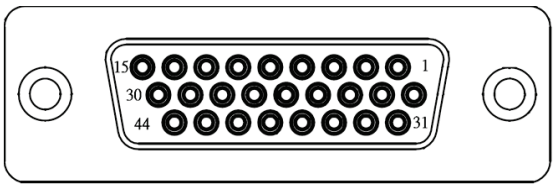
Rear Panel Connectors

Power



PS2

Video / Audio / Alarm / RS232 / DB9



Video / Audio

PIN No.	1	2	3	4	5	31	32	33	34	35
Description	Vedio_in1	Vedio_in2	Vedio_in3	Vedio_in4	Vedio_out	Audio_in1	Audio_in2	Audio_in3	Audio_in4	Audio_out
PIN No.	16	17	18	19	20	21	22	23	24	25
Description	GND	GND	GND	GND	GND	GND	GND	GND	GND	GND
Cable Tab	VIN1	VIN2	VIN3	VIN4	VOUT	AIN1	AIN2	AIN3	AIN4	AOUT

Alarm

PIN No.	6	36	7	37	28	8	38
Description	ALM_in1	ALM_in2	ALM_in3	ALM_in4	GND	ALMout	ALMout_COM
Cable Tab	1	2	3	4	5/8/9	6	7

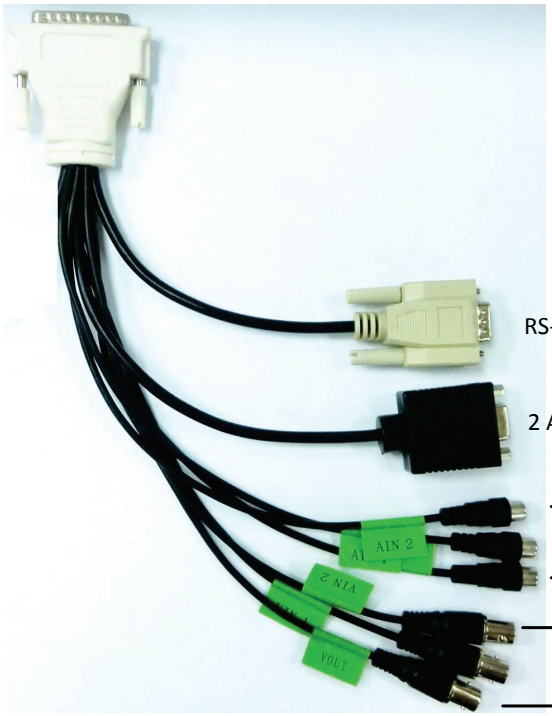
RS232

PIN No.	13	14	27
Description	RS232_RX	RS232_TX	GND
Cable Tab	2	3	5

D-Sub Cable

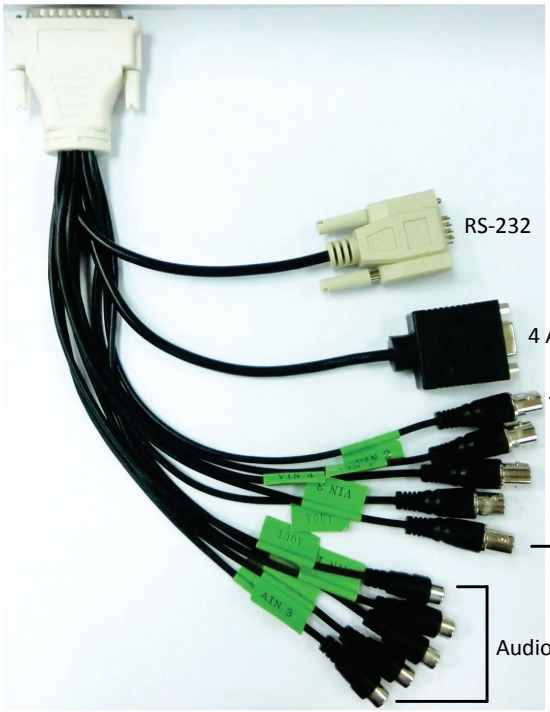
EMV200s

D-Sub Connector



EMV400s

D-Sub Connector



1.8 INSTALLATION PROCEDURE

- **Unpack Everything**

Make sure you have everything you need before you begin the installation.

- **Equipment Required**

The following tools may help you to complete the installation:

- Drill
- Screwdrivers
- Wire cutters

- **Choosing the Installation Location**

Choose a location that:

- Provides convenient access (and leaves enough room) for installing or removing the hard drive
- Allows air to flow around the DVR's fan vents. Inadequate air flow can impede proper operation of the unit

Avoid any location …

- That is subject to high vibration
- That receives direct sunlight or is subject to solar heating
- That is exposed to rainwater or dampness
- Where passengers can interfere with the unit
- That is near a heater duct

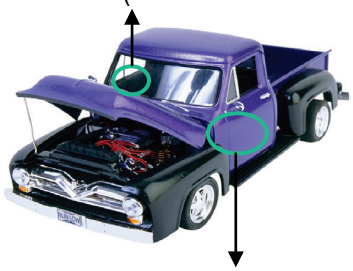
The following table lists the recommended location options.

Location	Convenient operation	Easy to install	Low vibration	Good air flow
Bottom of glove box- horizontal mount	Yes	Yes	Yes	Yes
Bottom of passenger seat next to the driver	NO	Yes	Yes	Yes
Underneath bulkhead-horizontal mount	Yes	Yes	NO	Yes
Front of bulkhead-horizontal mount	Yes	Yes	Yes	Yes
Beside deriver seat-horizontal mount	Yes	Yes	Yes	Yes

Caution: Do not install the DVR on the floor or on the transmission access hatch. These locations have the highest levels of vibration and may be exposed to water infiltration.

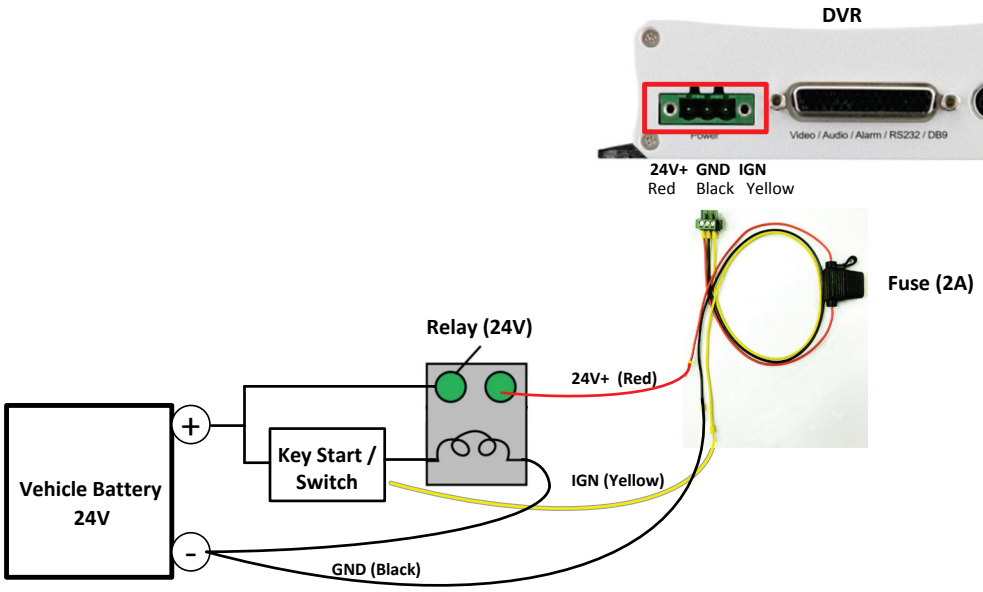
- **Possible Installation Locations Inside a Truck**

Glove box (inside or underneath)



Driver's seat (between the seat and the back panel) or underneath the Passenger seat

- **The diagram below shows the wiring on the wiring harness that connects to the electrical system.**

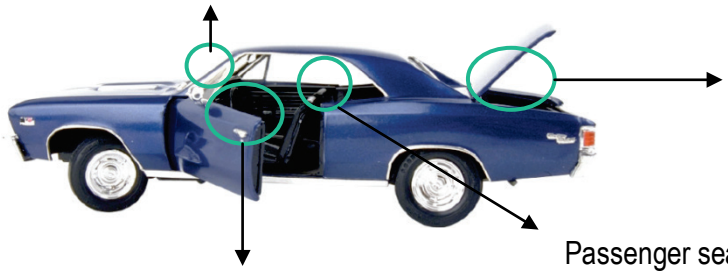


Note:

1. If the car is without an ignition key, please connect the IGN (yellow) wire directly or via a switch to the vehicle battery.
2. It is suggested to use a relay in the installation. Otherwise, the DVR will always draw the power from the vehicle battery.

- **Possible Installation Locations Inside a Car**

Glove box (inside or underneath)



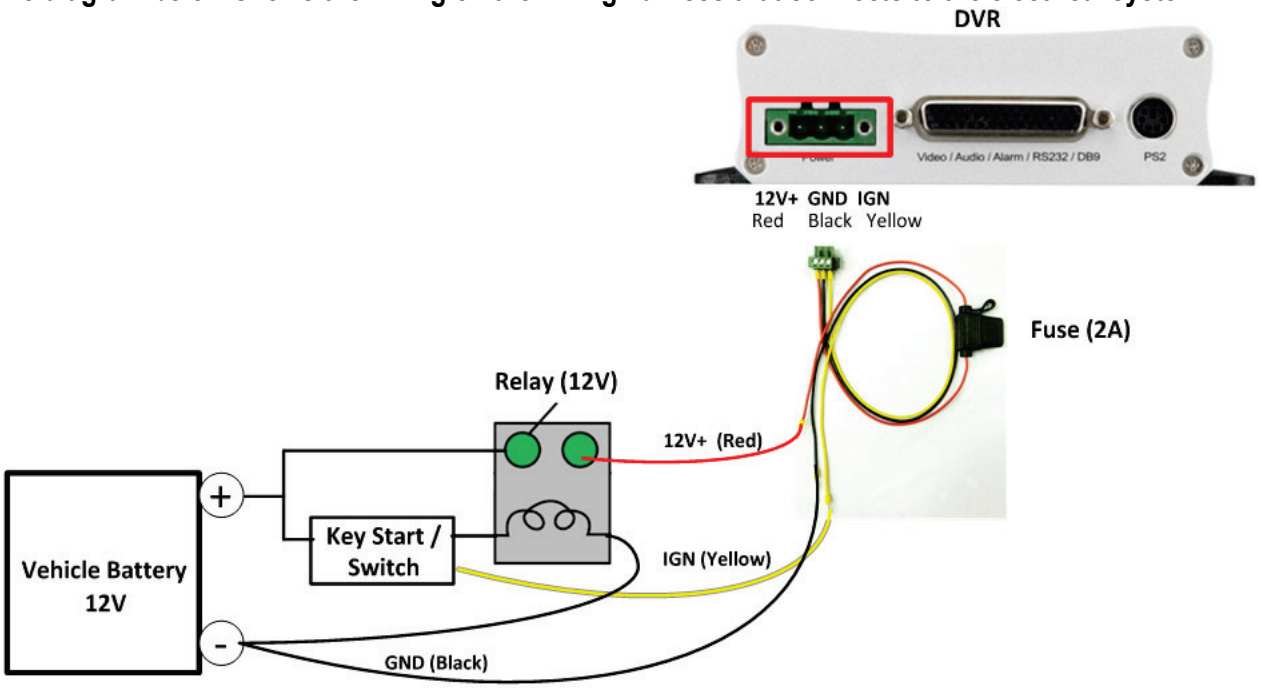
Trunk

Passenger seat (underneath)

Driver seat (between the seat and side panel)

-

- **The diagram below shows the wiring on the wiring harness that connects to the electrical system.**

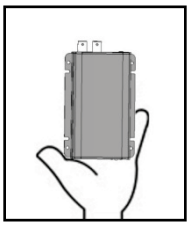


Note:

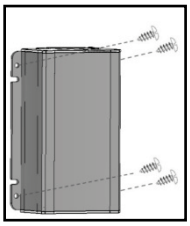
1. If the car is without an ignition key, please connect the IGN (yellow) wire directly or via a switch to the vehicle battery.
2. It is suggested to use a relay in the installation. Otherwise, the DVR will always draw the power from the vehicle battery.

- **Fixing the DVR to the Selected Installation Surface**

Step 1. Place your EMV200S/EMV400S in the most suitable location in the vehicle. Make sure the screw holes and screw plate are pointing toward the anchoring surface. The anchoring surface must be able to easily support the weight of the DVR.



Step 2. Place your screws in the 4 screw holes and screw them in tight.



Your DVR is now successfully mounted. You can now attach your connection cables and devices.

- **Installing the Camera(s) and Monitor**

The DVR is typically connected to one camera that is installed inside the car. Other cameras can also be installed in different locations in the car (for example, use a waterproof camera on the outside of the vehicle). A typical *monitor's* power supply would usually connect to the car's cigarette-plug adapter. For installation procedures, please refer to the guides that came with the camera(s) and monitor(s) you purchased.
The monitor and all cameras must be purchased separately.

- **Connecting the Camera(s) and a Monitor**

Connect the Video Output cable of each camera to a corresponding BNC-Female connector (marked "VIN") that is attached to the supplied D-Sub harness adapter.
Connect the Audio Output cable of each camera to a corresponding RCA-Female connector (marked "AIN") that is attached to the supplied D-Sub harness adapter.
Adjust each camera according to your requirements (usually by hand and via an OSD menu displayed on an attached monitor).
The EMV200S/EMV400S gives you the option of attaching one monitor to it. If you want to install a monitor in the vehicle, attach the *monitor's* Video and Audio Input cables to the BNC-Female and RCA-Female connectors marked "VOUT" and "AOUT". You can use this monitor to view all the feeds from your attached cameras – one at a time or simultaneously.

1.9 VIDEO I/O REQUIREMENTS

Cameras and CCTV monitors attached to this DVR must use copper-based 75 Ohm video cable (e.g. RG-59, RG-6, or RG-11) with BNC connectors (preferably male, or female via a female-female adapter).

Due to the possibility of impedance mismatch and undesired loss/reflections, 50 Ohm coax cable (e.g. RG-58) and 75 ohm foil shield antenna cable and other types of coaxial cable are ***not compatible***.

All connected video sources must provide a 1 Vpp NTSC or PAL video signal.

When converting other transmission types (twisted pair, fiber optics, radio) for the video inputs, be sure to verify accurate receiver calibration and signal levels.

ATTENTION: In order for the system to auto-detect the appropriate video format (NTSC or PAL), make sure that there is a video signal on Video Input 1 ("VIN 1") upon power-up.

1.10 AUDIO INSTALLATION

This DVR provides 2/4 line level audio inputs (4 in the case of the EMV400S) and 1 line level audio output.

PLEASE NOTE: The direct connection of a non-amplified microphone is not supported (a microphone amplifier is required). The audio output requires an amplifier to drive a speaker or headphones.

The installation must be done with audio coaxial cable and RCA connectors.

AUDIO RECORDING FUNCTIONALITY:

Audio recording is activated / deactivated on a per-camera basis in the DVR's Camera Menu. Please check and always comply with local laws and regulations when using audio recording.

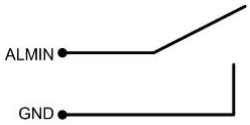
The audio channel is recorded with the video channel and is independent of the image recording rate. Audio recording is standard and do not require any further setup.

1.11 ALARM CONTACTS INSTALLATION

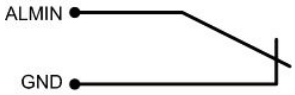
The 2/4 alarm inputs can be used to trigger recordings or to adjust recording rates. These inputs can also trigger alarms that cause the feed of the connected camera to be displayed on the surveillance monitor, or they can trigger buzzers, e-mail alerts and network alarms. The alarm output relay can be enabled if required. Alarm input response actions can be controlled according to a flexible schedule.

1.11.1 Alarm Input Contacts

This DVR provides one alarm input per camera. All inputs are programmable N.O. (Normal Open) or N.C. (Normal Closed).



Alarm input with N.O. (Normal Open) contact in idle state

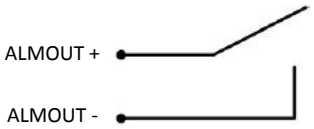


Alarm input with N.C. (Normal Closed) contact in idle state

All settings are programmed in the ALARM menu.

1.11.2 Alarm Output Relay

The relay output provides either Normally Open or Normally Closed dry contacts.



1.12 USB Mouse Installation

Connect the USB mouse to one of the two USB ports. (This can be done while the DVR is powered on).

NOTE: Recommended mouse types are Logitech® and Microsoft® wired USB wheel mice. Wireless USB mice are not supported.

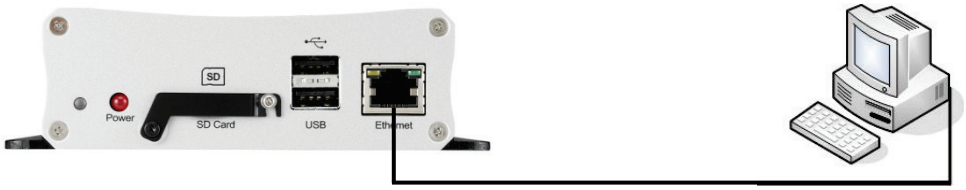
1.13 NETWORK CONNECTION

This section only describes physical connections to an Ethernet network. This step must be completed before the DVR can connect to the network. There are two basic types of connection:

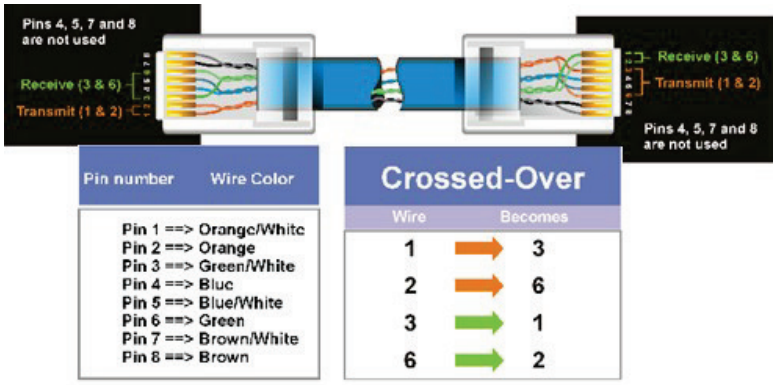
1.13.1 Direct PC Connection through Crossover Network Cable

Point-to-point connection of the DVR to a PC requires a crossover (crossed) network cable. This type of connection is ONLY used for direct connection to a single PC. Make sure that the PC has a 10/100Mbps-compatible network connection.

Direct PC-to-DVR connection:



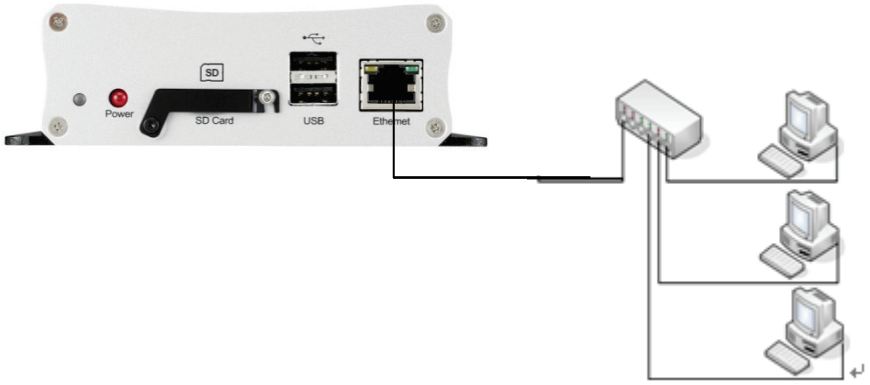
Pinout of the direct PC-to-DVR crossover-cable:



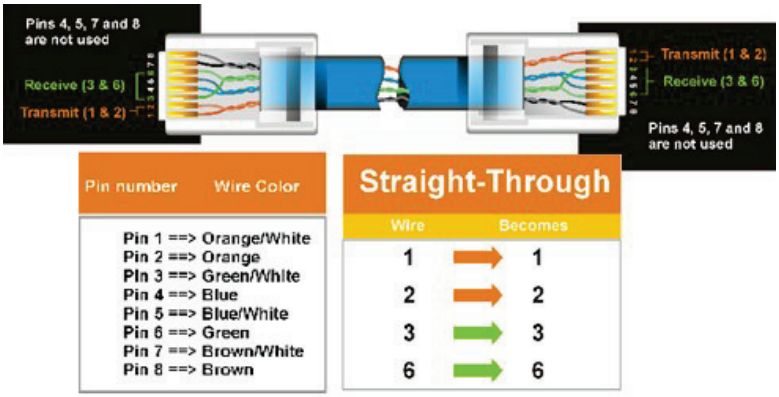
1.13.2 Network Connection through Patch Cable

The connection to an existing network requires a normal patch cable (straight-through). The illustration shows the connection to a network switch or router.

Connection via a network:



Pinout of straight-through patch cable (for a network connection):



1.14 STARTUP PROCEDURE

Once you have completed the basic wiring connections, you are ready to turn on the DVR. Simply plug in the power source. The POWER LED will light up if power is normal. Once the system has finished loading, you can begin to configure the DVR with the on-screen display menu (right-click with the mouse to open the on-screen display menu, or push the appropriate button on the IR remote control).

NOTE: When the DVR is placed in an environment where the temperature is under -10°C, the DVR will NOT turn on immediately. The DVR's **heater will heat up the DVR until the temperature reaches -5°C**. The DVR will only turn on when the temperature is above -5°C.

Chapter

2

2 USING THE MOUSE

The EMV200S/EMV400S supports two ways of controlling the DVR. It can be controlled with a mouse or with the handheld IR remote control. (For IR remote control, please refer to Appendix C: Remote Control.)

This chapter will cover basic operations via mouse control.

2.1 SELECTING A CAMERA CHANNEL

1. If your monitor is displaying the video feeds of 2 channels (EMV200S) or 4 channels (EMV400S) in separate blocks simultaneously, you can select which channel you want to enlarge to fill the whole screen by simply double-clicking on that channel's view block. Double-click again to go back to simultaneous view.
2. Clicking once on a view block will highlight that channel and activate it for configuration.

2.2 OPENING THE OSD CONFIGURATION MENUS

After the USB mouse has been connected, and once the DVR's camera feed view is displayed on the attached monitor, *right-click on the mouse to open the OSD* (on-screen display) root menu (main menu).

The OSD's Root Menu

- Click on an icon to perform that action. These actions are covered in detail in Chapters 4 and 5.
- Click the Live View button to return to "live view" (the view of the video-feed view blocks).
- Click the Playback button to open the Playback menu bar (described in Chapter 4).
- Click the Configurations button to open the Configuration submenu (described in Chapter 5).

2.3 FIELD INPUT OPTIONS

The following are examples of different input options available in the OSD configuration menu.

Text box: Click on any text box and an *on-screen keyboard* will appear*. (More details about the on-screen keyboard follow below.)

Dropdown box: Click on the down arrow to see all options, then click on an option to select it.

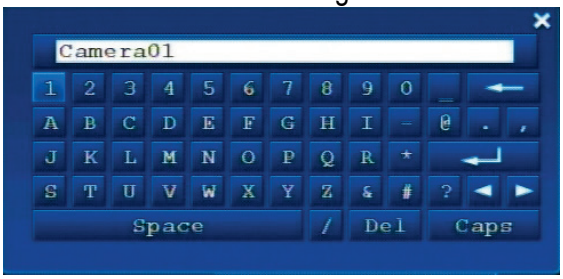
Check box: Click on a box to enable it (checked) or disable it (unchecked).

Command button: Click any given command button to execute that function.

On-screen keyboard: This keyboard appears when you click on a *text box*.

Click on a button to input that character.

The buttons on the right and bottom lines have the functions described in the table below:



Click on the input field to get the on-screen keyboard

Space	Enter a space
Caps	Switch to capital letters
/ "Del"	Delete the letter
	Confirm the selection
	Move cursor to the right
	Move cursor to the left

Chapter

3

3 CONTROLS AND LOGIN

3.1 MOUSE OR I.R. REMOTE

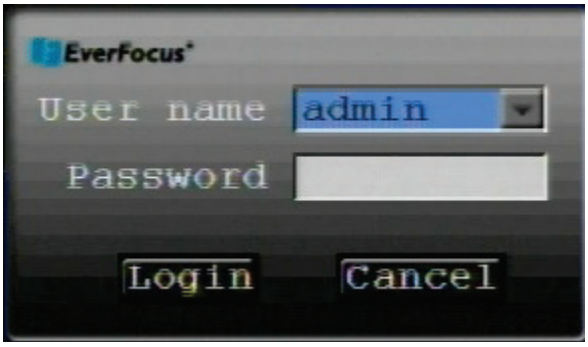
This DVR can be configured through menu options in its on-screen Playback bar and Configuration menu.

To access these menu options, connect the video output cable on the supplied D-Sub harness adapter (marked "VOUT") to the Video In cable of a monitor, then use a connected mouse or the remote control to configure the menu settings. For mouse control, see Chapter 2. For IR remote control, please refer to Appendix C: Remote Control.

3.2 LOGIN

In order to access the configuration options of the EMV200S/EMV400S, users might be asked to log in to assess the level of configuration they have been authorized to do. To log in, follow these steps.

1. Right-click on the screen to display the on-screen display (OSD) menu.
2. If login is required, the following screen will pop up:



The Login Screen

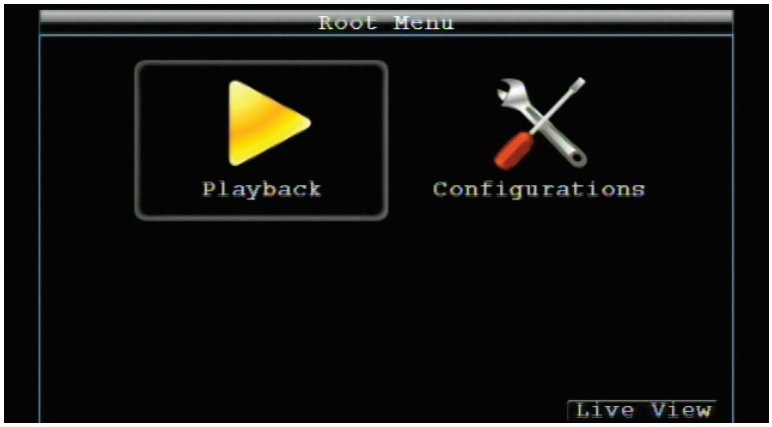
3. Click on the Username field to get a drop-down list of configured usernames. Click on the correct username. The default username is "admin".
4. Input the password. To input the password, click on the password field to bring up the on-screen keyboard (see the image in Section 2.1.3 above). Click on each desired character button to input that character. When finished, click " ↵ " on the on-screen keyboard to confirm the password. The default Username and Password is "admin" (lower case) and "11111111" (8 ones).
5. Click on the "Login" button to log into the system.

Chapter

4

4 PLAYBACK MENU

1. To bring up the root menu, right-click with the USB mouse to bring up the root menu. In this section we will look at the Playback menu options.



The Root Menu

2. Click on the "Playback" icon " " to enter the Playback menu. A Playback menu bar will appear:

Icon	Name	Description
	Display modes	The EMV200S/EMV400S DVR has three display-mode options: All Channels, Single Channel and Channel Sequence. Click repeatedly to cycle between the modes.
	Info modes	Click to show camera information, click again to show network, Storage, and GPS information. Click again to hide all information.
	Audio	Click to cycle through the audio channels of each camera and the "no audio" mode.
	Fast Rewind	Click to Fast Rewind. Click repeatedly to cycle through the FR speeds. Click the Play/Stop button to stop.
	Play / Stop	Click to play back or to stop. ***

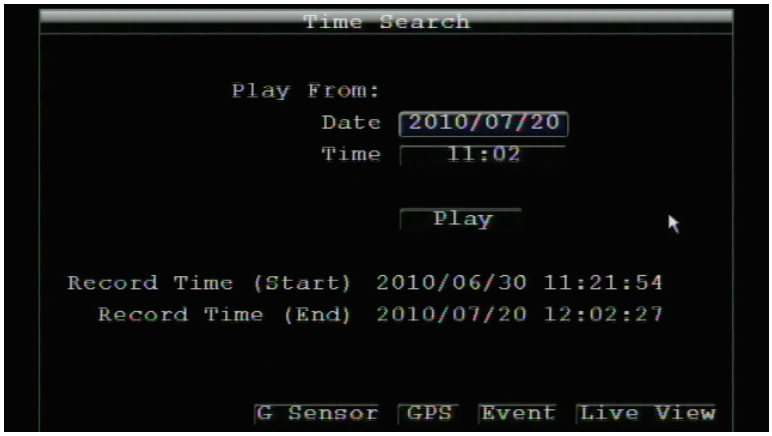
	Fast Forward	Click to start Fast Forward. Click repeatedly to cycle through the FF speeds. Click the Play/Stop button to stop.
	Search	Click to search recorded data by Date/Time, Event, G Sensor event or GPS event. Please see section 3.4 for more details about the search function.
	Archive	Click to save a selected video clip to USB. Please see section 3.5 for more details about the archive function.
	Exit	Exit from the playback bar to Live View.

*** During playback, the DVR will stop recording. If an event occurred during playback, the event will be saved in the Event Log, but it won't display alarm status.

4.1 SEARCH

Right-click to bring up the Root menu, select Playback and click to enter the **Search Menu**.

4.1.1 Date/Time Search



The Time Search menu

This is the default submenu of the Search Menu. The buttons of other submenus appear at the bottom of the page. These can be opened by clicking on their buttons.

Play From: Select the point in time from where you would like to start searching through the pre-recorded data.

Click on the "**Play**" button to start playing the recorded data from the point you selected. The DVR will play the nearest time if there is no data for the selected time.

Right-click to see a shortened version of the Playback control bar. Clicking the "**Stop**" button will return you to the Time Search menu.

Record Time (Start): Displays the starting time of record data in the storage device.

Record Time (End): Displays the end time of record data in the storage device.

Click the G Sensor button to enter the G Sensor Search menu. Click the GPS button to enter the GPS Speed Search menu. Click the Event button to enter the Event Search menu. Click the Live View button to go back to live view.

4.1.2 G Sensor Search

After clicking the Search icon on the Playback bar, the Time Search page will open. Click the G Sensor button at the bottom of the page to start the G Sensor search. The DVR will search for and display all recorded data within the selected time period where G Sensor events of the selected magnitude occurred.

The G-Sensor Search page

From: Select the date and time of recording from which you want the DVR to start searching.

To: Select the date and time of recording at which you want the DVR to stop searching.

The DVR will search for and display all recorded data within the selected time period where G Sensor events of the selected magnitude (below) occurred.

Select the way the search value (below) will be calculated. Options are **Less Than**, **More Than**, **Inside Range** and **Outside Range**.

Value: Set the G-sensor value to be searched. If the search format is a range, set the values for both ends of the range.

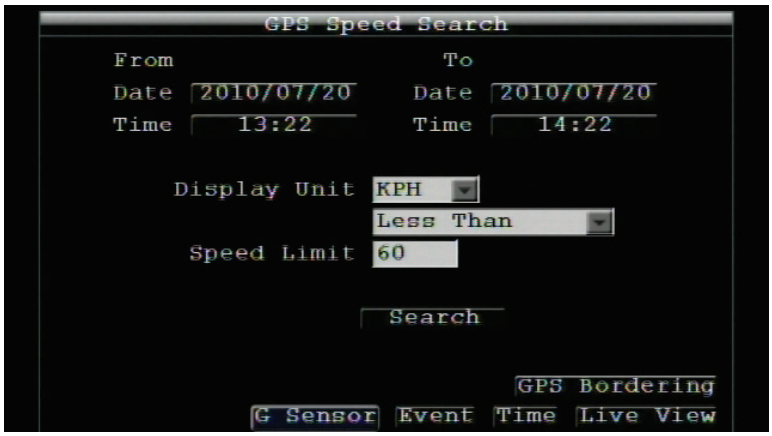
Click the Search button to start the search action.

Click the GPS button to enter the GPS Speed Search menu. Click the Event button to enter the Event Search menu. Click the Time button to go to the Time Search menu. Click the Live View button to go back to live view.

4.1.3 GPS Speed Search > GPS Bordering Search

After clicking the Search icon on the Playback bar, the Time Search page will open. Click the GPS button at the bottom of the page to open the GPS Speed Search page. The DVR will search for and display all recorded

data within the selected time period where GPS events of the selected type occurred (periods when the vehicle exceeded the selected speed).



The GPS Speed Search menu

From: Select the date and time of recording from which you want the DVR to start searching.

To: Select the date and time of recording at which you want the DVR to stop searching.

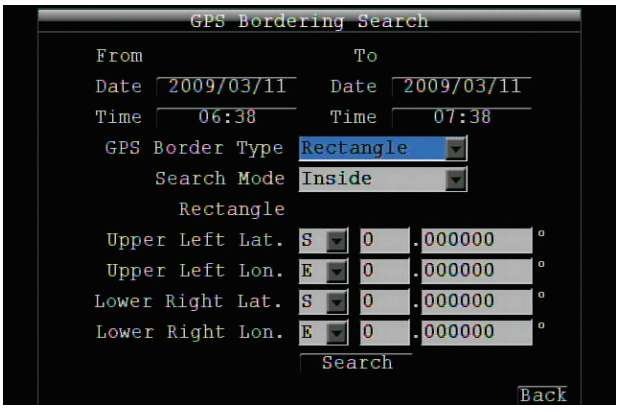
Display Unit: If the GPS module supplied the speed data, the desired speed unit (kilometers or miles per hour) must be selected here. For instance, selecting MPH will convert all kilometer values into their corresponding mile values.

Select the way the search value (below) will be calculated. Options are **Less Than**, **More Than**, **Inside Range** and **Outside Range**.

Speed Limit: Set the minimum speed – as recorded by the GPS module – at which the vehicle must have traveled to count as a search event. If the search format is a range, then set the values for both ends of range.

Click the Search button to start the search action.

Click the GPS Bordering button to enter the GPS bordering search menu. The DVR will search for and display all recorded data within the selected time period where GPS events of the selected type occurred (periods when the vehicle left a designated area by straying over the area's border).



The GPS Bordering Search menu opens from the GPS Speed Search menu

From: Select the date and time of recording from which you want the DVR to start searching.

To: Select the date and time of recording at which you want the DVR to stop searching.

GPS Border Type: Select either a circle or a rectangle.
Search Mode: Select if the search should look for events Inside or Outside the configured border.

Center Lat.: Set the latitude if the border type is circle.
Center Lon.: Set the longitude if the border type is circle.
Radius: If the GPS border type is circle, this option defines the circle's radius. Also select the distance unit (Km/Mi).

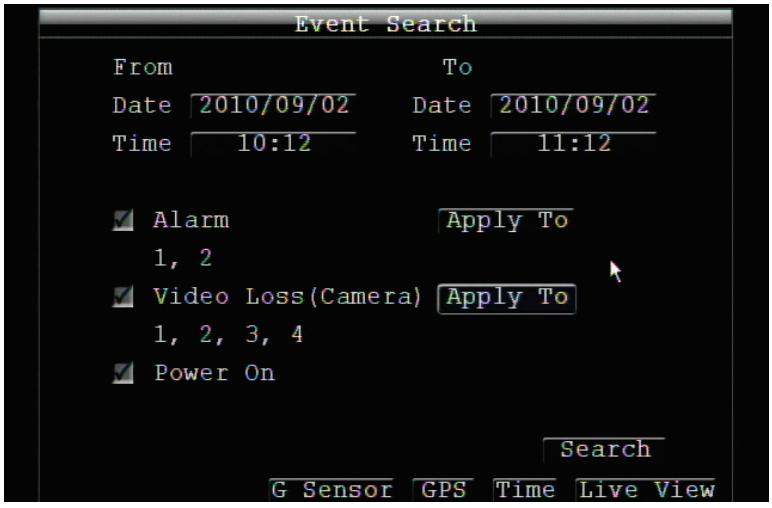
Upper Left Lat.: Set Upper Left Latitude if the border type is a rectangle.
Upper Left Lon.: Set Upper Left Longitude if the border type is a rectangle.
Lower Right Lat.: Set Lower Right Latitude if the border type is a rectangle.
Lower Right Long.: Set Lower Right Longitude if the border type is a rectangle.

Click the Search button to start searching.

Click the Back button to return to the previous menu level.

4.1.4 Event Search

After clicking the Search icon on the Playback bar, the Time Search page will open. Click the Event button at the bottom of the page to open the Event Search page. The DVR will search for and display all recorded data within the selected time period where events of the selected type occurred. Selection options are Alarm events, Video Loss events, and Power On events.



The Event Search menu

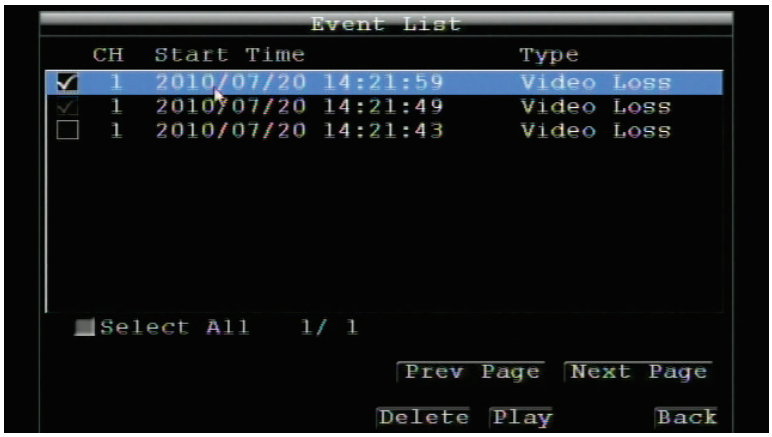
From: Select the date and time of recording from which you want the DVR to start searching.

To: Select the date and time of recording at which you want the DVR to stop searching.

Select which event type(s) to search for. Choose from Alarm, Video Loss or Power On.

Click on the Apply To button to select the recorded feeds of which cameras to include in the search.

Click on the Search button to start searching. The search results will be shown as a list of events.



The Event List menu shows the results of the Event Search

Prev Page: Go to previous page

Next Page: Go to next page

Play: Play back selected item

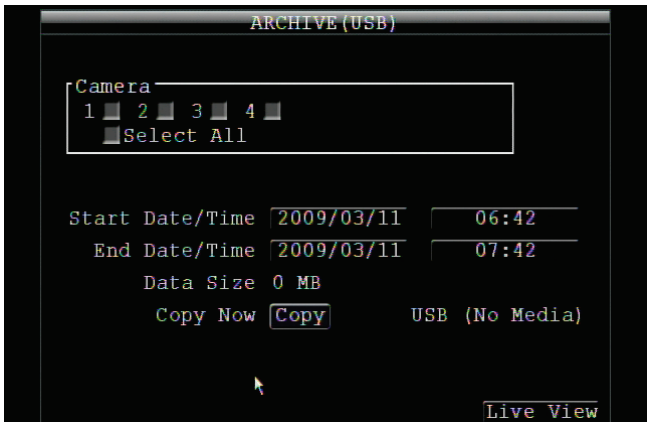
Delete: Delete selected item

Click the Back button to return to the previous menu level.

Click the G Sensor button to enter the G Sensor Search menu. Click the GPS button to enter the GPS Search menu. Click Time button to enter the Time Search menu. Click the Live View button to return to live view.

4.2 ARCHIVE (TO USB DEVICE)

Right-click to bring up the Root menu, select Playback and click to enter the **Archive Menu**.



The Archive menu

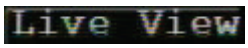
Camera: Select which cameras' recorded data will be archived. Choose "**Select All**" to select all the cameras.

Start Date/Time: Select the date/time of recording that will be the beginning of the recorded period which you want to archive.

End Date/Time: Select the date/time of recording that will be the end of the recorded period which you want to archive.

Data Size: Shows the estimated file size for the selected time period.

Copy Now: Press "**Copy**" button to start archiving the data to your connected USB device.

Click the 

button to return to live view.

Chapter

5

5 CONFIGURATION MENU

This chapter will walk you through the DVR's Configuration menu items and show you how to set the DVR for your specific application.

1. Right-click to bring up the Root menu.

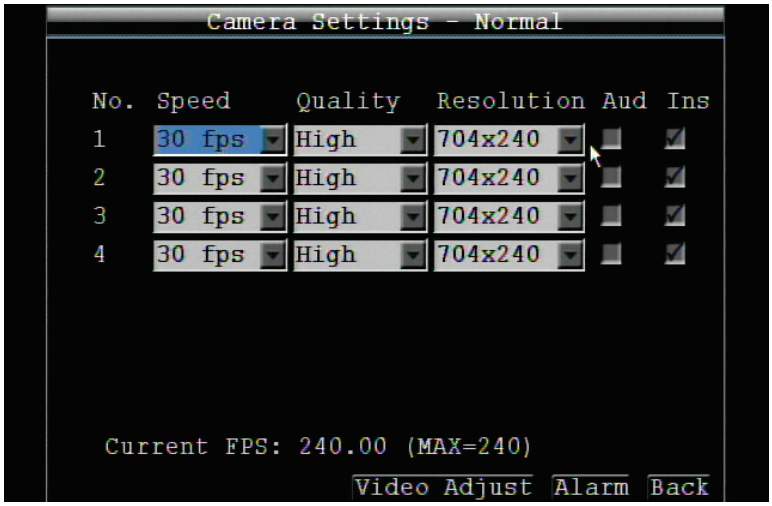
The Root Menu

2. Click on the "Configuration" icon ( ) to enter the Configuration menu. Log in if required (see Section 3.2 above).

The Configuration Menu

5.1 CAMERA

Clicking on the camera icon opens the Camera Settings – Normal menu. This menu is used to configure individual camera recording settings.



Clicking on the Camera icon opens the Camera Settings-Normal menu

5.1.1 Camera Settings – Normal

No.: Camera's channel number.

Speed: Frame rate in frames (images) per second (FPS) for continuous recording. The speed is limited by the maximum total recording capacity of the DVR as allocated across all the installed cameras, with an upper limit of 30 FPS (NTSC – 25 PAL) per individual camera (real time recording). The DVR is capable of recording 480 CIF (352x240) sized frames per second (NTSC; 400 PAL); each 704x240 image (2 CIF) per second requires allocation of two of those CIF frames from the overall capacity of 480 CIF frames, and each 704x480 image (D1 or 4 CIF) per second requires allocation of four of the CIF frames from the overall capacity. Thus the DVR can record a combination of CIF, 2 CIF and 4 CIF images, with different combinations of image size/resolution and different FPS rates on different cameras, as long as the total CIF equivalents allocated is not greater than 480 CIF per second. Choices for possible record speeds are 30, 15, 10, 7.5, 5, 1 and 0 FPS.

Quality: Select an image quality for recording. There are five different qualities available: Superior, High, Standard, Basic and Low. A higher image quality uses more storage space.

Resolution: Select recording resolution based on video format.

NTSC: 704x480 / 704x240 / 352x240

PAL: 704x576 / 704x288 / 352x288

Aud: Check this box to record the channel's audio feed in addition to the video feed.

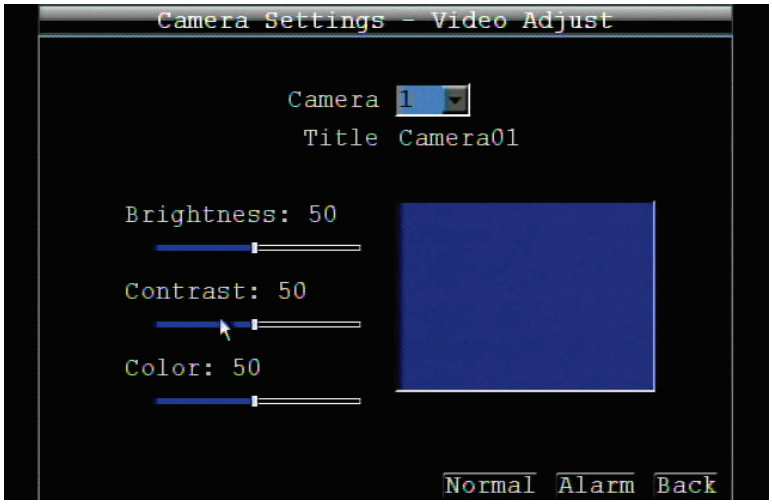
Ins: Check this box to **enable the selected camera**. To take full advantage of the DVR's recording abilities, any unused cameras should have this option disabled (unchecked).

Click the Video Adjust button to enter the Video Adjust menu.

Click the Alarm button to enter the Alarm menu.

Click the Back button to return to the previous menu level.

5.1.2 Camera Settings – Video Adjust



The Camera Settings - Video Adjust menu

Camera: Select the channel number of the camera you wish to adjust. The "Title" field will display the given name of the selected camera.

Brightness: Adjusts how bright/dark the picture appears. If details appear to be lost in the shadows or darker regions, try increasing the Brightness. If the image appears too saturated or if the colors appear overwhelmed by glare, try decreasing the Brightness.

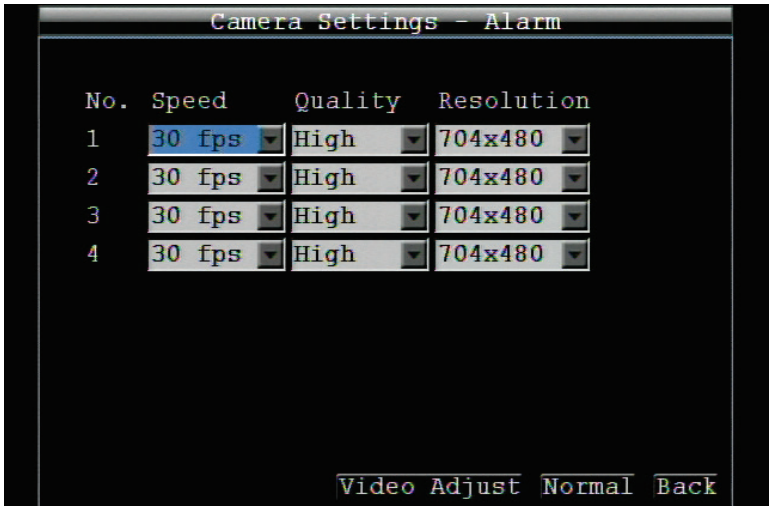
Contrast: Adjusts the total amount of light output from the display. If details are lost or lines appear distorted, try decreasing the contrast.

Color: Adjusts the amount of color information in the picture.

Click Normal to enter Camera-Normal setting menu. Click Alarm button to enter Alarm menu.

Click Back button to return to the previous menu level.

5.1.3 Camera Settings – Alarm



The Camera Settings – Alarm menu

Speed:

This is the *maximum* desired frame rate in frames per second (FPS) for alarm-event recording; if more than one camera requires simultaneous event recording, the total for all cameras cannot exceed the maximum available FPS for the DVR at the corresponding resolution setting, and *the available FPS may be divided across the cameras responding to an event.* In the example above, with 225 CIF FPS allocated and 255 CIF FPS remaining, it would be possible to increase the FPS rate on the two 4 CIF cameras from 10 FPS to 15 FPS and also increase the *resolution and rate* of the five 2 CIF cameras to 4 CIF and 15 FPS, with 15 CIF equivalent FPS still available to be assigned to one or more of the nine CIF resolution cameras. If not all event conditions occur simultaneously, greater resolution and/or FPS increases are possible for individual cameras, as long as the net total of 480 CIF equivalents is not exceeded.

Quality: Select an image quality for event recording. There are five different qualities available: Superior, High, Standard, Basic and Low. A higher image quality uses more storage space.

Resolution: Select recording resolution based on video format.

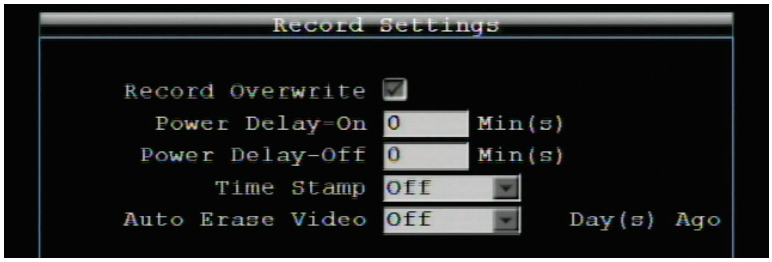
NTSC: 704x480 / 704x240 / 352x240

PAL: 704x576 / 704x288 / 352x288

Click the Video Adjust button to enter the Video Adjust menu. Click Normal to enter Camera-Normal setting menu. Click Back button to return to the previous level of menu.

5.2 RECORD

Clicking the Record icon opens the Record Settings menu (below). This menu is used to configure general recording settings.



Record Overwrite: Check this box if you want the DWR to write over the previous recording when full.

NOTE: Unless this box is checked, THE DVR MUST STOP RECORDING WHEN THE STORAGE DEVICE IS FULL. ***The use of Record Overwrite is strongly recommended.*** *If you do not use this feature, please be sure to make specific arrangements to monitor/be notified when the storage device is full.*

Power Delay-On: This is the length of time that the DVR will wait before starting up after the vehicle is switched on. This helps to avoid excessive power consumption and power surges during startup.

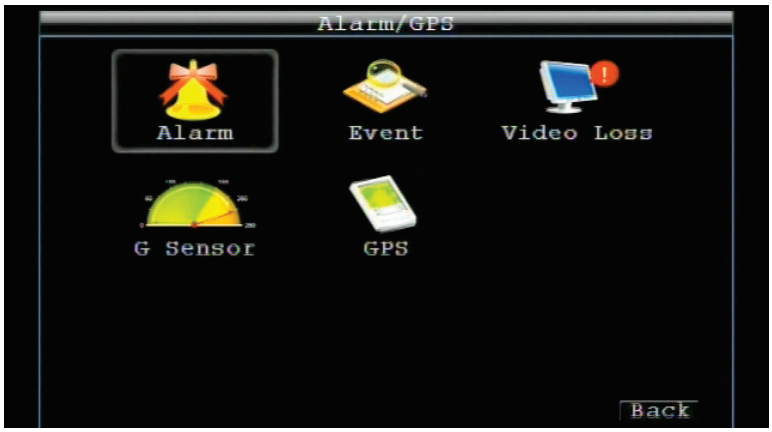
Power Delay-Off: This is the length of time that the DVR will stay on after the vehicle is switched off. This lets the DVR stay functional even if the vehicle is not.

Time Stamp: Select if the time and date will display while recording. OFF means no display, TOP and BOTTOM means time/date will be displayed and refers to where it will be displayed on the screen.

Auto Erase Video: The hard drive will automatically erase video after it has been on the hard drive for the selected number of days. To use the maximum available hard drive space, choose "OFF". (See the Record Overwrite section and notes above.) This feature is useful if local rules and regulations require recorded video to be discarded after a specific number of days, or to limit the retention of older recorded video to clear space in anticipation of event recording.

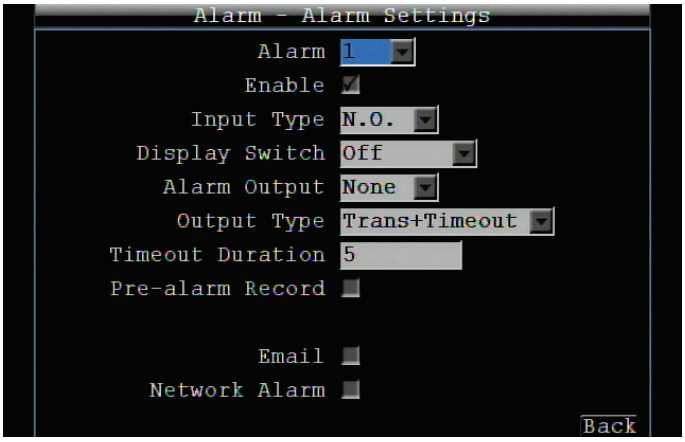
Click the Back button to return to the previous menu level.

5.3 ALARM/GPS



Click on the Alarm icon in the Alarm/GPS menu to get the Alarm Settings menu

5.3.1 Alarm – Alarm Settings



Alarm – Alarm Settings

Alarm: Select the alarm input trigger connection number (channel number).

Enable: Check this box to enable a response to the alarm trigger from the above-selected channel.

Input Type: This field is to select the type of alarm trigger.

N.O.: Normal Open contact.

N.C.: Normal Closed contact.

Display Switch: Select which channel to be displayed when alarm is triggered. Available options are CH1~4, Quad 1, Quad 2 and Quad 3.

Alarm Output: This will transmit a signal through the alarm output. It can be set to either "**NONE**" (not active), "**1**" or "**2**" (selects alarm relay to be active).

Output Type: Output action when alarm is triggered.

Timeout: Alarm output lasts for the set time duration.

Permanent: Alarm will remain active until the user presses the **"Enter"** key or resets the alarm remotely.

Transparent: Alarm output remains as long as the alarm input is active.

Trans+Timeout: Alarm output continues until event ends, then continues for the set time duration.

Timeout Duration: Time duration selectable from 1 to 150 seconds.

Pre-alarm Record: Check box to start copying recorded video to the storage device from 5 seconds before the alarm event. (Pre-alarm recording rate will follow the "**Normal**" frame rate setting)

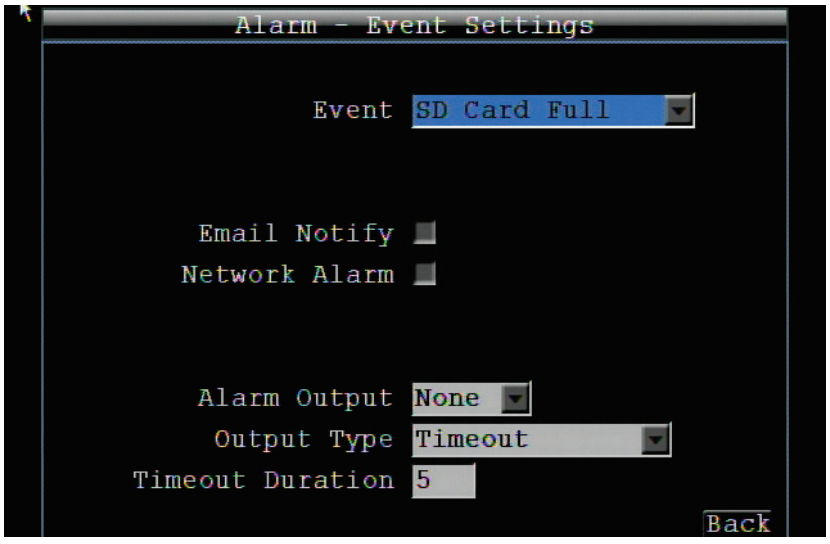
Email: Check box to enable email notification when an alarm occurs. Email operation requires that valid email settings have been entered in the Network Setting/Email setup screen. (See Section 4.7.4 Email for more information.)

Network Alarm: Check this box to send out a network alarm to a client PC when motion occurs. (This feature requires CMS software, including EverFocus' PowerCon or PowerVideo Plus, and setting up Alarm Server in Network Setup menu; see Section 4.7.6 Alarm Server for more information.)

Click Back button to return to the previous level of menu.

5.3.2 Alarm – Event Settings

This section covers notifications due to internal system event warnings.



Alarm – Event Settings (GPS Loss event)

All possible variables on the Alarm – Event Settings menu page:

These are all the possible variables for all possible events on this menu page. The variables and command lines differ per selected event and variable:

Event: Click on this field to select from the following event types:

SD Card Full: If the DVR is not set to Overwrite in the Record Menu, an event will be created when the SD card is filled.
SD Card Missing: If the DVR fails to detect the SD card on startup, the system will create this event.
Power Loss: If power is disconnected, an alarm event will be triggered when power is restored.
Network Loss: If connection to the local network is lost, DVR will create a Network Loss event.

NOTE: *This function only checks the physical connection (link) to the network. Any network behavior that blocks data connectivity (blocked ports, IP addressing errors, etc.) is not detected by this function.*

GPS Loss: If the GPS signal is lost, the DVR will create a GPS Loss event.

Email Notify: Check box to enable email notification when above-mentioned event has occurred. Email operation requires that valid email settings have been entered in the Network Setting / Email setup screen.

Network Alarm: Check box to send out a network alarm to client PC. (requires CMS software, including EverFocus' PowerCon or PowerVideo Plus, and setting up Alarm Server in Network Setup menu)

Alarm Output: This will transmit a signal through the alarm output. It can be set to either "**NONE**" (not active), "**1**"(output 1 is active).

Output Type:

Timeout: Alarm output lasts for the set time duration.

Permanent: Alarm will be continuously active until user presses the "**Enter**" key or resets the alarm remotely.

Transparent: Alarm output remains active as long as the alarm condition remains active.

Trans+Timeout: Alarm output continues until event ends, then continues for the set time duration.

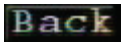
Timeout Duration: If Timeout is selected under Output Type, this field will appear. This the number of seconds the alarm condition continues when the Event is active. Duration selectable from 1 to 150 seconds.

NOTE:

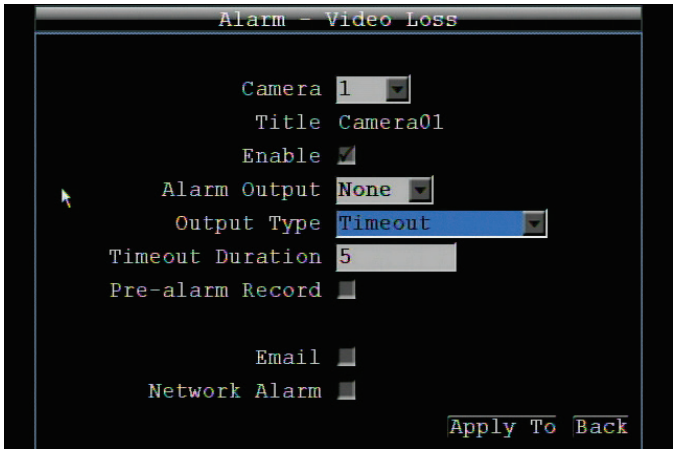
In case of a Power Loss event: *As alarms and emails cannot be transmitted without power, the log entry is made when power is restored, and any notifications cannot be made until that time.*

NOTE:

For Network Loss event*: This function only checks the physical connection (link) to the network. Any network behavior that blocks data connectivity (blocked ports, IP addressing errors, etc.) is not detected by this function.*

Click  button to return to the previous level of menu.

5.3.3 Alarm – Video Loss



Alarm – Video Loss

Camera: Select the camera channel you wish to configure. “Title” will change to the ID of the selected camera channel.

Enable: Check this box to enable Video Loss detection.

Alarm Output: This will transmit a signal through the alarm output relay. It can be set to either “**NONE**” (not active), or “**1**” (output 1 is active).

Output Type: Output action when alarm is triggered.

Timeout: Alarm output lasts for a set time duration. If this option is selected, a field will appear for setting the duration. Time duration selectable from 1 to 150 seconds.

Permanent: Alarm will remain active until the user presses “**Enter**” key on front panel.

Transparent: Alarm output continues as long as there is a video loss.

Trans+Timeout: Alarm output continues until the event ends, then continues for a set time duration.

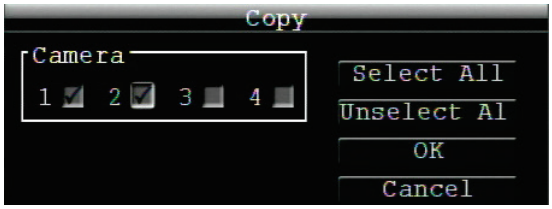
Timeout Duration: If Timeout is selected under Output Type, this field will appear. This the number of seconds the alarm condition continues when the Event is active. Duration selectable from 1 to 150 seconds.

Pre-alarm Record: Check this box to start copying recorded video to the storage device from 5 seconds before the video loss event. (Pre-alarm recording rate will follow the “**Normal**” frame rate setting)

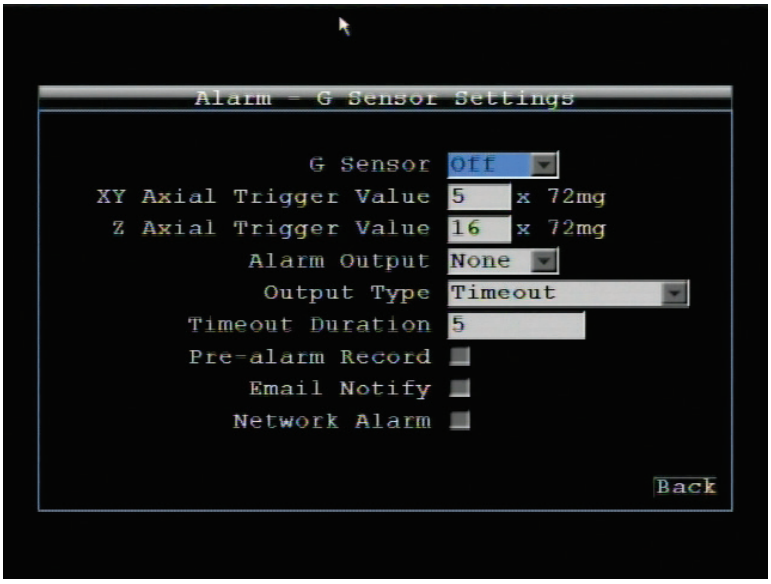
Email: Check box to enable email notification when a video loss event occurs. Email operation requires that valid email settings have been entered in the Network Setting/Email setup screen.

Network Alarm: Check this box to send out a network alarm to a client PC when video loss occurs. (This feature requires CMS software, including EverFocus’ PowerCon or PowerVideo Plus, and setting up Alarm Server in Network Setup menu; see Section 4.7.6 Alarm Server for more information.)

Apply To: This button can be used to copy the video loss settings to other cameras. Select which cameras you wish to copy to. "Select All" selects all cameras, “Unselect All” deselects all cameras. Click “OK” to copy the settings or "Cancel" to exit without copying.



5.3.4 Alarm – G Sensor Settings



Alarm – G-Sensor Settings menu

G-Sensor: Select On to enable the G-Sensor event function. Select Off to disable the G-Sensor event function.
XY Axial Trigger Value: Set the XY Axial trigger value. If the setting above is ON, the alarm will be triggered when acceleration reaches this value in a horizontal direction with respect to the horizon.
Z Axial Trigger Value: Set Z Axial trigger value, alarm will be triggered when acceleration reaches this value in vertical direction with respect to the horizon.
Alarm Output: This will transmit a signal through the alarm output relay. It can be set to either "**NONE**" (not active), "**1**" (active) or "**2**" (active).
Output Type: Output action when alarm is triggered.

Timeout: Alarm output lasts for the set time duration.

Permanent: Alarm will be continuously active until user presses the "**Enter**" key.

Transparent: Alarm output remains active until event ends.

Trans+Timeout: Alarm output continues until event ends, then lasts for the set time duration.

Timeout Duration: The amount of time the alarm output will be active when GPS is lost. Duration selectable from 1 to 150 seconds.

Pre-alarm Record: Check this box to start copying recorded video to the storage device from 5 seconds before the video loss. (Pre-alarm recording rate will follow the "Normal" frame rate setting)

Email Notify: Check this box to enable email notification when GPS is lost. Email operation requires that valid email settings have been entered in the Network Setting/Email setup screen.

Network Alarm: Check this box to send out a network alarm to client PC. (Requires CMS software, including EverFocus' PowerCon or PowerVideo Plus, and setting up Alarm Server in Network Setup menu.)

Click Back button to return to the previous level of menu.

5.3.5 Alarm – GPS (Speed)

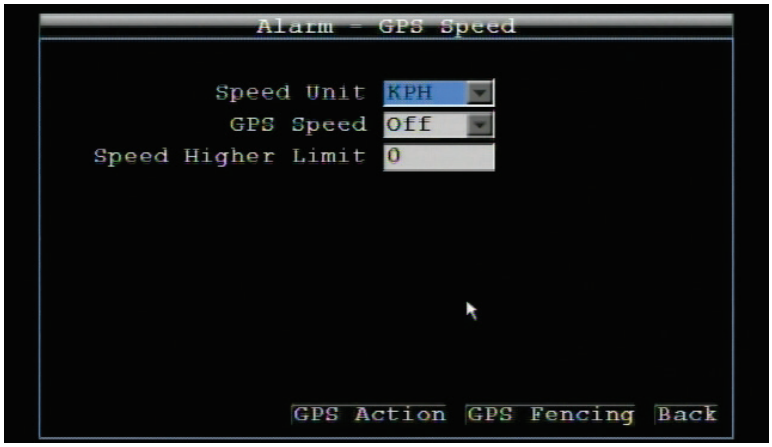


Figure 5-21 Alarm – GPS Speed

Speed Unit: If the speed is being recorded from the GPS receiver, the desired speed measurement units (kph or mph) must be selected. Selecting MPH lets the DVR display the GPS speed in miles per hour, and vice versa.

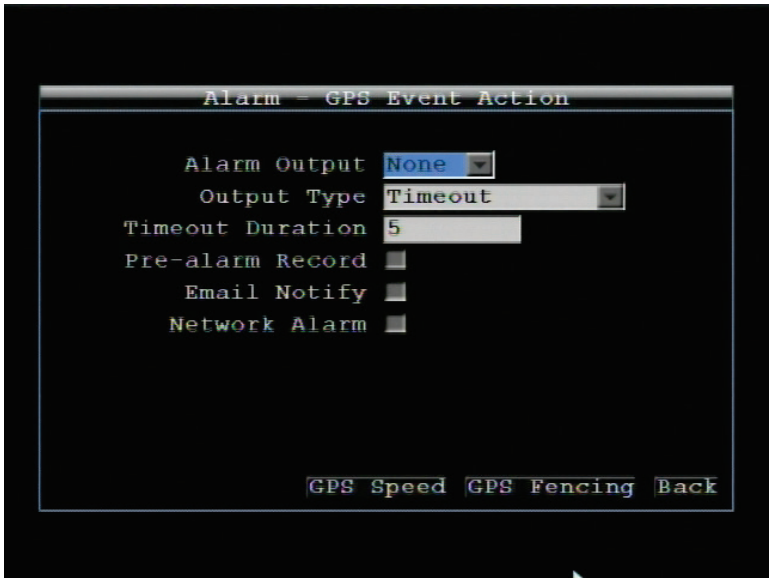
GPS Speed: Select whether to **record** the vehicle speed (ON) or not (OFF).

Speed Higher Limit: Set the speed at which the alarm will be triggered.

Click Back button to return to the previous level of menu.

5.3.6 Alarm – GPS Event Action

Press GPS Action ***at the bottom of the Alarm – GPS Speed menu*** to open the GPS Event Action Menu.



The Alarm – GPS Event Action menu

Alarm Output: This will transmit a signal through the alarm output relay. It can be set to either "**NONE**" (not active), "**1**" (active).

Output Type: Output action when alarm is triggered.

Timeout: Alarm output lasts for the set time duration.

Permanent: Alarm will be continuously active until user presses "**Enter**" key.

Transparent: Alarm output remains active until event ends.

Trans+Timeout: Alarm output continues until event ends, then lasts for the set time duration.

Timeout Duration: The amount of time the alarm action will be active when a GPS event occurs. Duration selectable from 1 to 150 seconds.

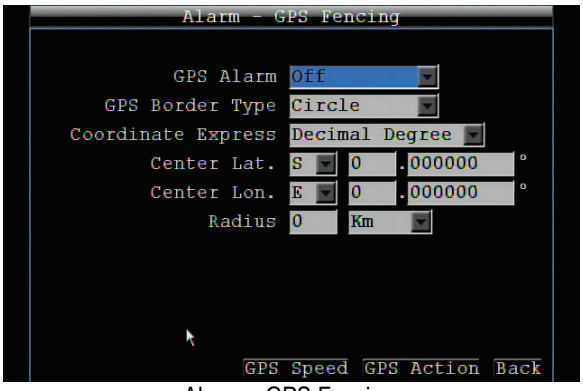
Pre-alarm Record: Check box to start copying recorded video to the storage device from 5 seconds before the video loss. (Pre-alarm recording rate will follow the "**Normal**" frame rate setting)

Email Notify: Check box to enable email notification when GPS event occurs. Email operation requires that valid email settings have been entered in the Network Setting/Email setup screen.

Network Alarm: Check box to send out a network alarm to client PC. (requires CMS software, including EverFocus' PowerCon or PowerVideo Plus, and setting up Alarm Server in Network Setup menu)

5.3.7 Alarm – GPS Fencing

Press GPS Fencing ***at the bottom of the Alarm – GPS Speed menu*** to enter the GPS Fencing menu.



Alarm – GPS Fencing

GPS Alarm: Select "On" to enable GPS alarm. Select "Off" to disable GPS alarm function.

GPS Border Type: Set to a circle or rectangle and dynamic prompts for Latitude and Longitude appear.

Coordinate Express: This field lets you select how you enter your border coordinates, either by Decimal Degrees, or by DMS (degree, minute, second).

Center Latitude: Set the latitude if the border type is a circle.

Center Longitude: Set the latitude if the border type is a circle.

Radius: If the GPS border type is a circle, this option defines the radius. Select radius unit from Km and Mi.

Upper Left Latitude.: Set Upper Left Latitude if border type is rectangle.

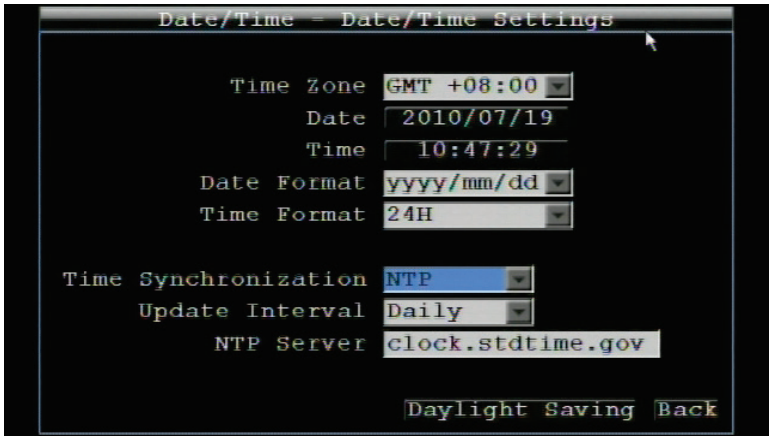
Upper Left Longitude: Set Upper Left Longitude if border type is rectangle.

Lower Right Latitude: Set Lower Right Latitude if border type is rectangle.

Lower Right Longitude: Set Lower Right Longitude if border type is rectangle.

5.4 DATE / TIME

When in the Root menu, click the Configuration icon, then the Date/Time icon. The menu screen below will appear. This menu is for setting up the date/time parameters for the DVR.



Date/Time – Date/Time Settings

5.4.1 Date/Time Settings

Time Zone: Set the time zone that the DVR adjusts to when updating from the time server.

Date: Set current Date.

Time: Set current Time.

Date Format: Choose date format from yyyy/mm/dd, dd/mm/yyyy, and mm/dd/yyyy.

Time Format: Change time format between 12H and 24H mode.

Time Synchronization: Select "Off", "NTP" or "GPS" for time synchronization.

If selecting "**NTP**", you will be able to do the following NTP settings:

Update Interval: The frequency that the system automatically updates the time via the NTP server. Select Daily, Weekly, or Monthly.

NTP Server: Displays the time server address that the DVR uses for time synchronization. Requires operating network configuration and WAN or LAN access to a compatible NTP server.

To find a compatible NTP address, please follow these steps:

a) Go to a PC that is connected to the internet.

b) Click on “START” -> “RUN” -> type “command” and press “OK”.

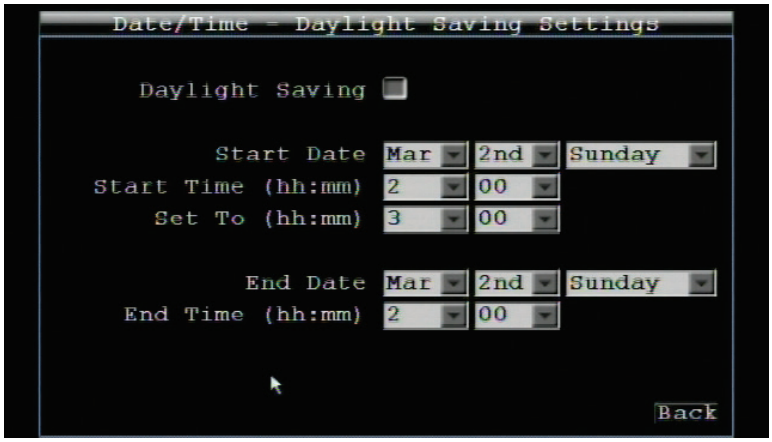
c) In the DOS Prompt, type “ping pool.ntp.org” to find out the IP address of an NTP Server.

If selecting “**GPS**”, you will be able to do the following setting:
Update Interval: The frequency that the system automatically updates the time via the NTP server. Select Daily, Weekly, or Monthly.

Click Back button to return to the previous level of menu.

5.4.2 Date/Time – Daylight Saving Settings

Click the Daylight Saving button at the bottom of the previous screen to set up daylight saving parameters.



Date/Time – Daylight Saving Settings

Daylight Saving: Check the box to enable automatic daylight saving time adjustment.

Start Date: Set the start date for daylight saving time.

Start Time (hh:mm): Set the time when daylight saving time begins.

Set To (hh:mm): This is what the time will change to when daylight saving begins. For most regions, this will be one hour ahead of the “Start Time”.

End Date: Set the end date for daylight saving time.

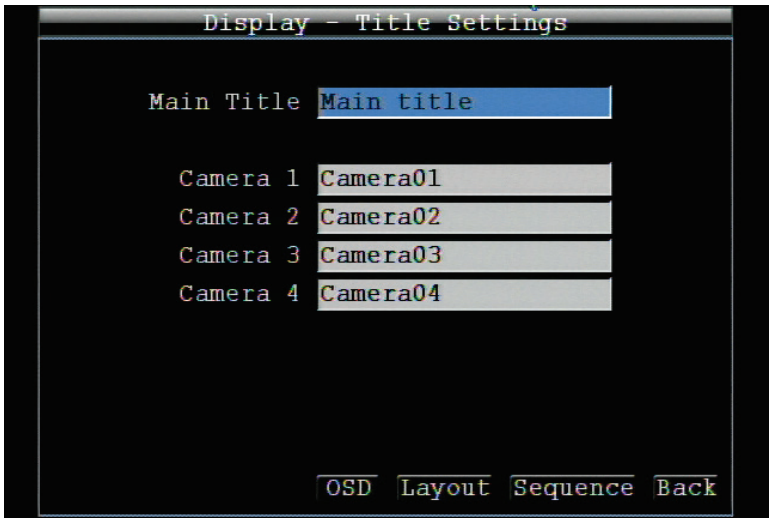
End Time (hh:mm): Set the time when daylight saving time ends.

The time change difference on the End Date will be the same as the difference between the Start Time and End Time entered for the Start Date (typically 1 hour as in the example shown).

Click Back button to return to the previous level of menu.

5.5 DISPLAY

In the Configuration menu, click the Display icon to open the Display – Title Settings screen shown below. This menu will walk you through the Main Monitor's On-Screen Display (OSD) and Main Monitor Sequence setup. Click the buttons at the bottom to open other Display setup menus.



Display – Title Settings

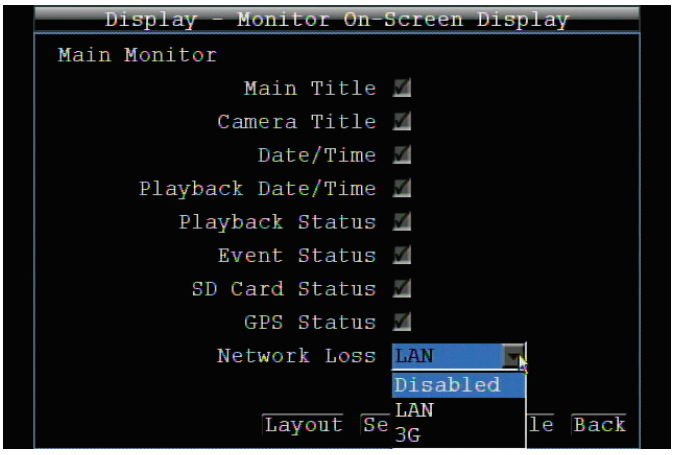
5.5.1 Display – Title Settings

Main Title: Input the main title by using the on-screen keyboard. Maximum text length is 16 characters.

Camera 1~4: Input ID names for cameras 1~4 by using the on-screen keyboard. Maximum text length is 16 characters.

5.5.2 Display – Monitor On-Screen Display

Click the OSD button to set up the ***Main Monitor's*** OSD parameters.



Display – OSD

Main Title: Check this box to display the main title.

Camera Title: Check this box to display camera titles for main monitor.

Date/Time: Check the box to display current date/time.

Playback Date/Time: Check the box to display playback date/time.

Playback Status: Check the box to display playback status.

Event Status: Check the box to display event status.

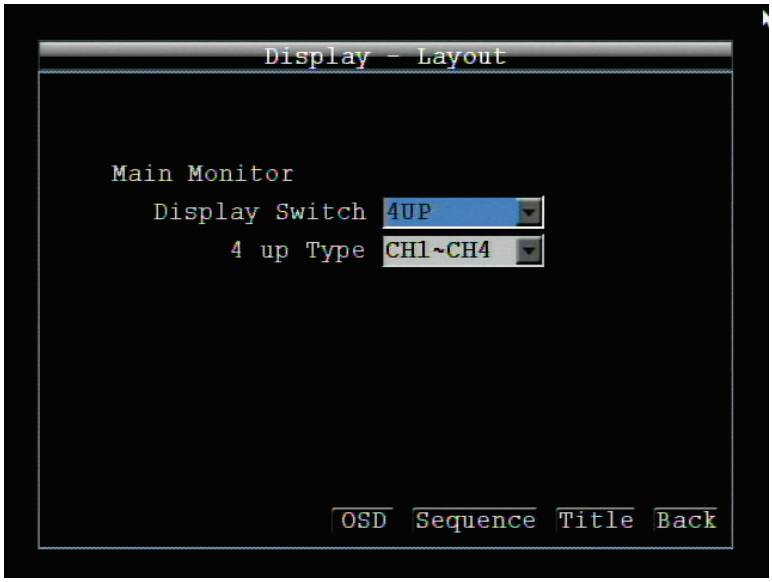
SD Card Status: Check the box to display the SD Card status.

GPS Status: Check the box to display GPS status.

Network Loss: Select Disabled, LAN, or 3G.

5.5.3 Display – Layout

Click the Layout button to set up Layout parameters (the way camera feeds will be displayed) for the ***Main Monitor***.



Display-Layout

Main Monitor

Display Switch: Select the display switching method for the main monitor.

1 UP = only 1 channel displayed (if this is selected the field below it will turn to "1 up Type" and you must select which channel will be displayed.

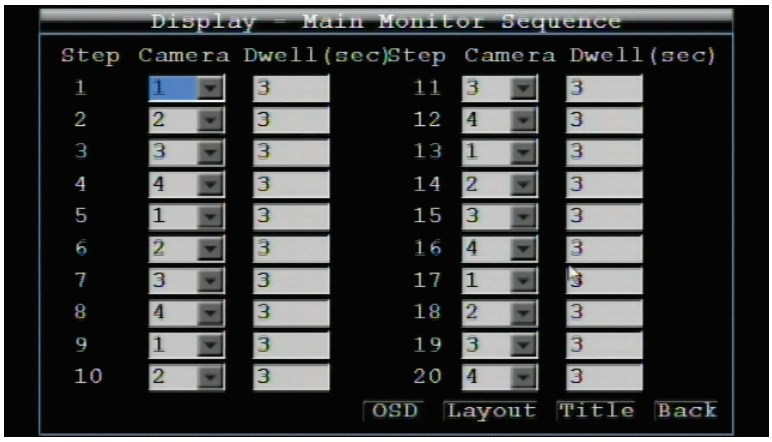
4 UP (2 UP for EMV200S) = All channels displayed simultaneously.

SEQ.= All channels displayed in time-delayed sequence

4 Up Type / 1 Up Type: Layout type for the display switch. 4 Up means all channels will be displayed, no need to select one. 1 Up means only one will be displayed, select one.

5.5.4 Display – Main Monitor Sequence

Click the Sequence button to set up Sequence parameters.



Step: Sequence order. For reference.

Camera: Select which camera appears in the current step.

Dwell (sec): Set the dwell time for each step. Sequence dwell time can be set from 0 to 99 seconds.

Sequence repeats continuously from steps 1 through 20 until interrupted.

Click Back button to return to the previous level of menu.

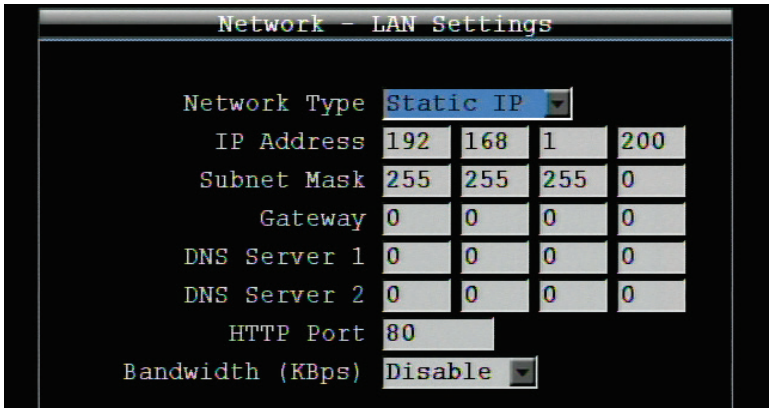
5.6 NETWORK

From the Configuration root menu, click on the Network icon to open the Network setup options. This menu is for configuring the DVR for a network connection.

5.6.1 LAN Settings

Click the LAN icon to open the LAN setup options.

NOTE: *Since every Network Configuration is different, please check with your Network Administrator or ISP to see if your DVR should use specific IP addresses and/or port numbers.*



Network Type:

Static IP: User can set a fixed IP for network connection.

DHCP: DHCP server in LAN will automatically assign an IP address for the network connection.

IP address: This field shows the DVR's current IP Address. A static IP address must be set manually. If DHCP or PPPoE is selected, this value will be assigned automatically.

Subnet Mask: This field shows the subnet mask for your network so the DVR will be recognized within the network. If DHCP or PPPoE is selected, this value will be assigned automatically.

Gateway: This field shows the gateway on your network for the DVR to use when communicating with any devices not on the local network. If DHCP or PPPoE is selected, this value will be assigned automatically.

DNS Server 1: This field shows the primary DNS server for your network. If DHCP is selected and an internet connection is available, this value should be assigned automatically. This field must have a valid DNS address in order to use the DDNS feature (see Sections 4.7.5 and 7 DDNS for more detail).

DNS Server 2: This field shows the secondary DNS server for your network.

HTTP Port: Port number for HTTP/WEB communication.

Additional information:

1. Set up the DVR Network Menu according to the instructions detailed in the Networking chapter of this DVR's manual.

    a. If using DHCP, all settings will be detected automatically. While DHCP is a useful tool for determining the network settings, if you set up your DVR in this manner *its IP address may change at different times for different reasons*, particularly after a power failure. *If the IP address of the DVR changes, you may have difficulties accessing your DVR* locally and/or remotely. **It is strongly recommended that you assign a fixed (static) IP address to your DVR**, and that in order to avoid address conflicts the IP address assigned be outside of the DHCP range of addresses your router issues to DHCP clients. Please do not set the DHCP address issued to the DVR by the router as its static IP address unless you take specific steps that program your router to prevent such address conflicts.

b. If using a Fixed IP (**recommended**), you will need to input the information manually. In order for DDNS to work, you must enter valid data, compatible with your network, for all four of the network setting fields: IP address, subnet mask, default gateway and the DNS Address (depending on your network hardware and configuration this may be the IP address of your router/gateway, or it may be the actual IP address of the local DNS server).
The DNS server IP is required because your DNS server provides critical information necessary for the DVR to communicate with the DDNS server.

You can obtain the actual DNS IP from your Internet Service Provider (ISP); or, from a PC located on the same LAN as the DVR, go to http://www.dnsserverlist.org/ to obtain a list of the IP addresses of their recommendation of the best servers to use for your location.

2. If you are connecting through a router, make sure that you have 'opened up' all the required network ports in the *port forwarding* section of your router's setup options. That is, you have directed the router to send any incoming traffic using those IP ports to the LAN IP address of the DVR. Useful information about router port forwarding can be found at www.portforward.com . Different routers may use different terms for port forwarding function. For instance, D-Link calls it *virtual server*, Netopia calls it *pinholes*.

The default port for the EMV200S/EMV400S is: 80

Note: Port 80 is the default port used for web browsing. Because of this, in order to prevent the average user from hosting a web server, ***most ISPs BLOCK traffic using port 80*** from reaching the average site. If you only plan to view your DVR on a LAN, you can use port 80, and don't have to concern yourself with DDNS or routers. However, if you desire remote access to your DVR, perhaps using DDNS (optional), you MUST select functional ports and set up the port forwarding in your router. Other ports, such as 8080 and 8000 are sometimes blocked by ISPs as well.
What port(s) should be used? There are 65,535 valid IP ports to choose from. These are broken down into three groups:

- Well Known Ports 0 thru 1023
- Registered Ports 1024 thru 49151
- Dynamic and/or Private Ports 49152 thru 65535

So, rather than encounter a port conflict by choosing a port commonly used for another purposes (like port 25 for SMTP mail or port 448 for secure sockets), choose an 'unusual' port number. For example, add 50,000 to your house number: 50,123 is less likely to lead to a port conflict. For a list of the known and registered ports, see http://www.iana.org/assignments/port-numbers

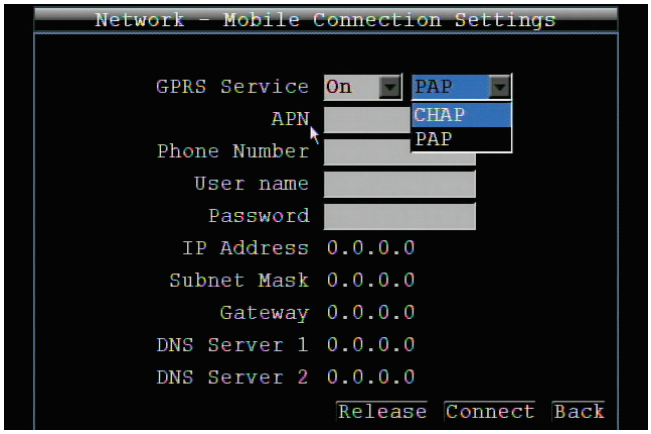
Bandwidth (Kbps): Specify, disabled / 128 K/ 256 K / 512 K / 768K/ 1M / 3M bps. This is the maximum bandwidth that the DVR is allowed to use on the network. This is a useful function when connecting the DVR to busy or heavily loaded networks, or when accessing the DVR(s) over a WAN.

Click the "Connect" button to start the LAN reconnection.

Click

button to return to the previous level of menu.

5.6.2 Mobile Connection Settings



GPRS Service: Select "On" to enable GPRS service (CHAP or PAP). Select "Off" to disable GPRS function.

APN (Access Point Name): By local ISP setting.

Phone Number: Input the phone number to dial for mobile connection.

User Name: Input the user name required for mobile connection.

Password: Input the password required for mobile connection.

IP Address: The IP address provided by ISP will be displayed.

Subnet Mask: The Subnet Mask provided by ISP will be displayed.

Gateway: The gateway provided by ISP will be displayed.

DNS Server 1: The primary DNS server provided by ISP will be displayed.

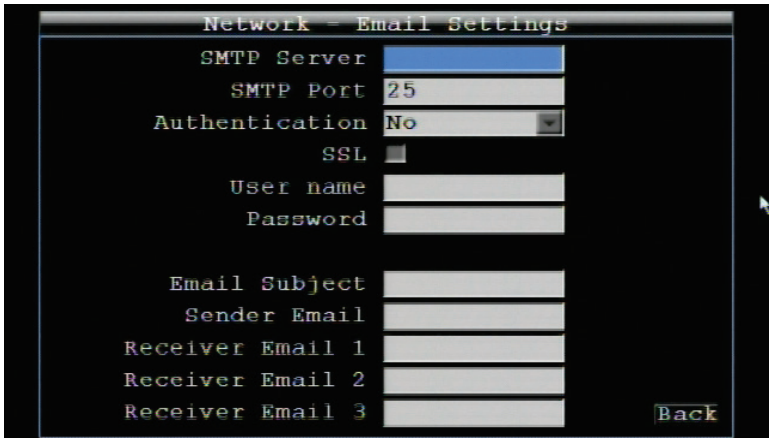
DNS Server 2: The secondary DNS server provided by ISP will be displayed.

Click Release button to stop mobile connection.

Click Connect button to start mobile connection.

Click Back button to return to the previous level of menu.

5.6.3 Email Settings



SMTP Server: Assign the SMTP (e-mail) server's name.

NOTE: *For more reliable email service, use the server's IP address.*

SMTP Port: Assign the port number used by the SMTP server.

Authentication: Check this box if the SMTP server requires authentication (user name / password).

SSL: Check the box if mail server needs communication to be encrypted by SSL.

User name: Input the login user name if the SMTP server requires authentication.

Password: Input the password if the SMTP server requires authentication.

Email Subject: Input Email subject.

Sender Email: Input the e-mail address of the sender (the DVR). Sender's e-mail address has to match the user name and password above.

Receiver Email 1: Input the first e-mail address that event messages are sent to.

Receiver Email 2: Input the second e-mail address that event messages are sent to.

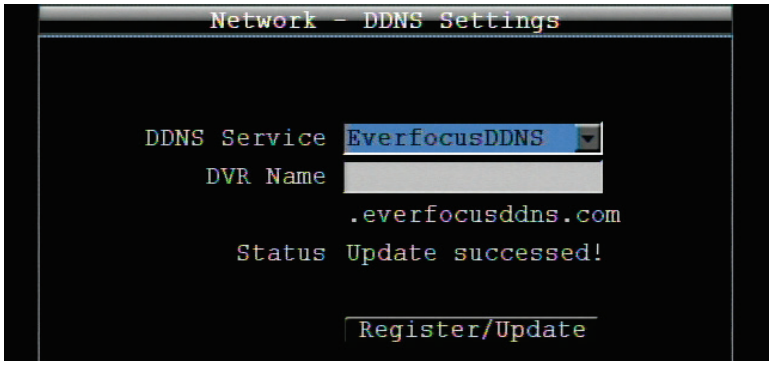
Receiver Email 3: Input the third e-mail address that event messages are sent to.

Click Back button to return to the previous level of menu.

5.6.4 DDNS Settings

DDNS Server: Select either "EverfocusDDNS" or "www.dyndns.org" as the DDNS provider. If DDNS will not be used, simply select "Disabled".

EverfocusDDNS:



DVR Name: Input the desired name for the DVR

Register / Update: Click the button to submit and register the name to the Everfocus server.

The DDNS name you choose must be unique; that is, it must not already be in use. Please go to the website http://everfocusddns.com and check that the name you wish to use is available.

PLEASE NOTE: The name of the DVR **cannot include a space, or a dot** (period) or **any special characters like ~ ! @ # $ % ^ & * ( ) + < > " ; : . , _**

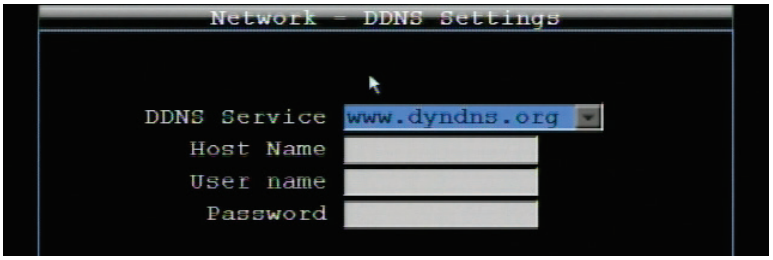
In the DVR's Network Menu above, go to DDNS. Choose "everfocusddns.com" for the Server and put in your chosen name (verified available and without special characters) for DVR Name/hostname.

Press the Submit/Update button to synchronize the DVR with the DDNS server. You should see an indication of "Success" on the screen. If you see "Could Not Find Server" or any other error message instead, double-check your network settings and DDNS name and resubmit the DDNS name until you get "Success". You should now be able to connect by typing in the host name you created.

Example: http://hostname.everfocusddns.com

It is not necessary to append the HTTP port number to the DDNS name. The EverFocus DDNS server not only keeps track of your DVR's IP address, it keeps track of the ports too!

www.dyndns.org



Host name: Host name created through the dyndns account.

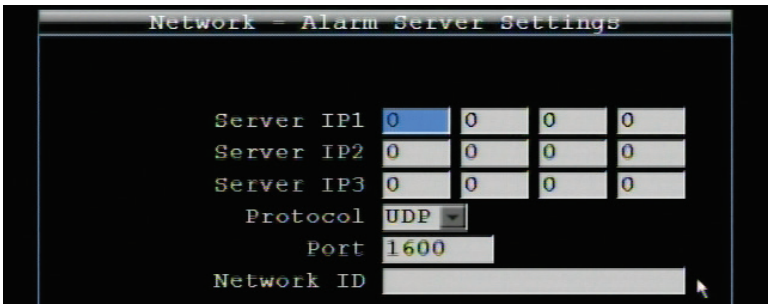
User name: User name of the dyndns account.

Password: Password of the dyndns account.

Note: For more details on DDNS setup, please see "Chapter 8 - Everfocus DDNS Setup".

Click Back button to return to the previous level of menu.

5.6.5 Alarm Server Settings



This menu defines the parameters for communicating with a PC.

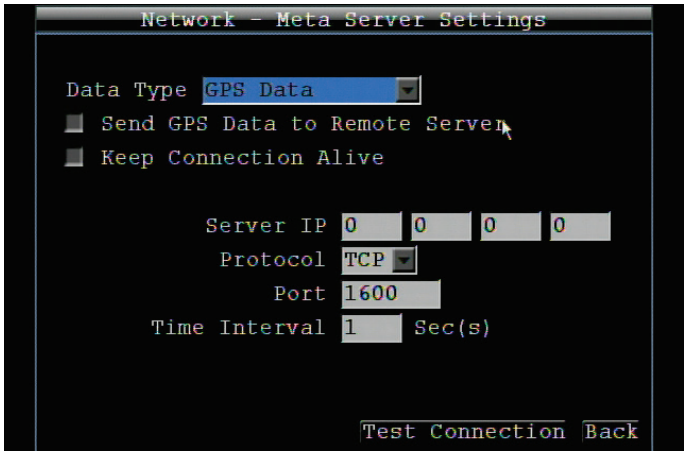
Server IP1~3: IP address of client PC. The network alarm can be transmitted to up to 3 addresses.

Protocol: Select the protocol type for alarm transmission:
UDP: User Datagram Protocol
TCP: Transmission Control Protocol

Port: Select the transmission port for network alarm messages

Network ID: The network ID is an identifier for the alarm transmitter (DVR sending the alarm).
Click Back button to return to the previous level of menu.

5.6.6 Meta Server Settings



Data Type: Choose between GPS Data and G-Sensor Data.

Send GPS Data to Remote Server: Check to enable this function.

Keep Connection Alive: Check to enable this function.

Server IP: Enter the IP address of the server.

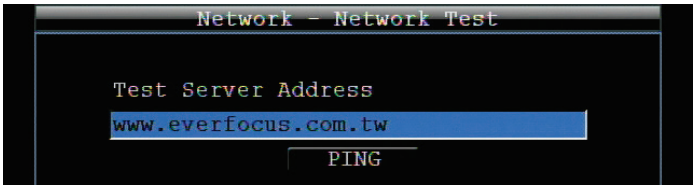
Protocol: Choose the server's transmission protocol (TCP or UDP).

Port: Select the relevant port.

Time Interval: 1 to 240 seconds selectable.

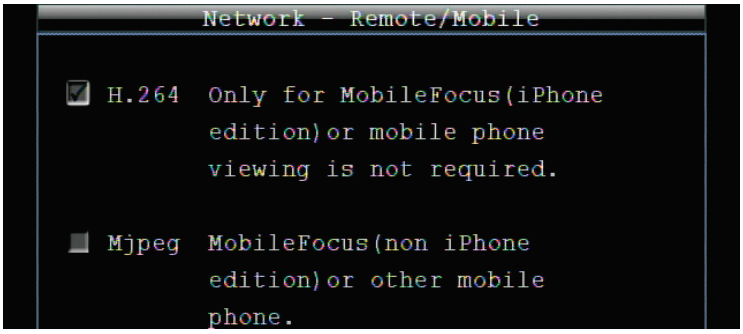
Click the Test Connection button to test the connection.

5.6.7 Network Test



Type in the address and click the Ping button. (Click the input field to bring up the on-screen keyboard.)

5.6.8 Remote / Mobile

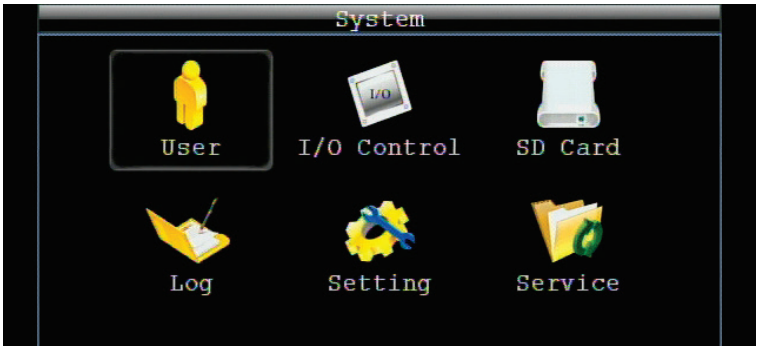


Click the option of your choice.

5.7 SYSTEM

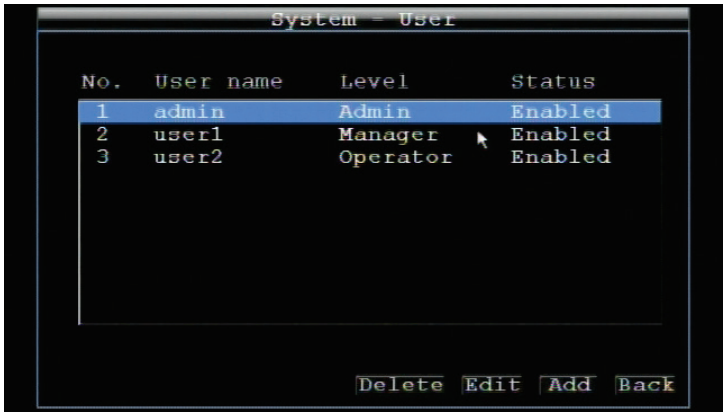
From the Configuration root menu, click on the System icon to open the System setup options.

This menu is for setting up the general system parameters for the DVR. Click the User icon to open the User configuration menu.



5.7.1 User

User Menu is where you can add or delete different login IDs on the system as well as set access levels. See the tables below for a listing of the rights associated with each access level.



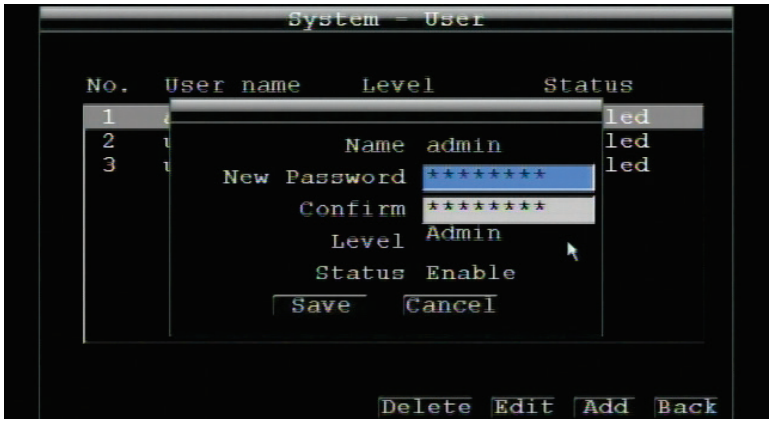
Description of the functions of the System – User menu's bottom buttons:

Add

Click the "Add" button to add a new user. Set the name (case-sensitive), password, access level and status. Press the "Add" button to confirm a new user or "Cancel" to exit without making changes.

Edit

Click “Edit” button to make changes to an existing user account. Press “Save” button to save changes or “Cancel” to exit without making changes.



System-User-Edit

There are three system access levels – Admin, User, and Guest. The following tables show the configuration rights of each level.

Local		Admin	User	Guest
Live View		O	O	O
Copy		O	O	O
Playback		O	O	X
Configuration	Camera	O	O	X
	Record	O	O	X
	Alarm/GPS	O	X	X
	Date/Time	O	O	X
	Display	O	X	X
	Network	O	X	X
	System	O	X	X
	Information	O	O	O

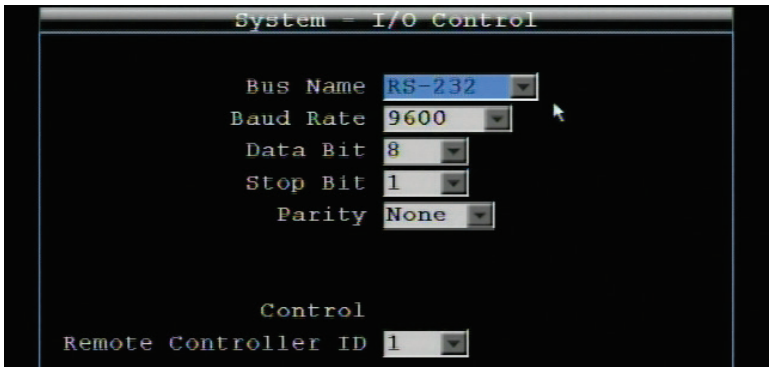
Web	Admin	User	Guest
Live View	O	O	O
Copy	O	O	O
Search & Playback	O	O	X
Camera	O	O	X
Record	O	O	X
Alarm/GPS	O	X	X

Date/Time	O	O	X
Display	O	X	X
Network	O	X	X
System	O	X	X
Information	O	O	O

NOTE: User-level users can change only their own passwords and the passwords of Guest-level users; and they can only add, delete or edit usernames for lower levels.

5.7.2 I/O Control

This menu is used to define the settings for controlling the DVR through RS232, and for DVR control of attached PTZ cameras.



System – I/O Control – RS232

Select the Bus Name (RS-232, or GPS).

RS232

Baud Rate: This field is to set the speed at which is used to transmit instruction or information through the RS232 port on the DVR. There are eight different speeds: 1200 BPS, 2400 BPS, 4800 BPS, 9600 BPS, 19200 BPS, 38400 BPS, 57600 BPS and 115200 BPS.

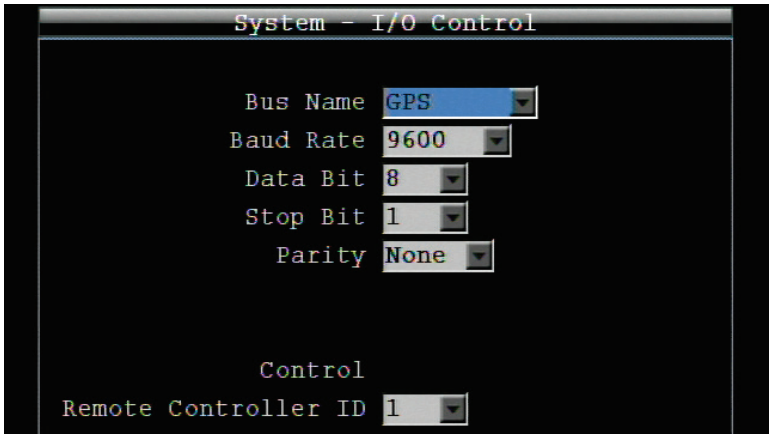
Data Bit: This field is the data bit at which you will be transferring. There are two settings for this option: 8 or 7.

Stop Bit: This field is to set the stop bit for the RS232 connection. There are two different stop bits, 1 or 2.

Parity: This field is to select the parity level at which you will be connected. You can choose between None, Odd, or Even parity levels.

Click Back button to return to the previous level of menu.

GPS



System – I/O Control – GPS

Baud Rate: The speed used to transmit instructions or information through the GPS on the DVR. Choose from the following speeds: 1200, 2400, 4800, 9600, 19200, 38400, 57600, 115200 BPS.

Data Bit: The number of data bits used in a data packet or word. This can be set to 8 or 7.

Stop Bit: This field is to set the number of stop bits indicating the end of a data packet. This can be set to 1 or 2.

Parity: This selects the transmission error-checking rule. Choose either None, Odd, or Even.

Control

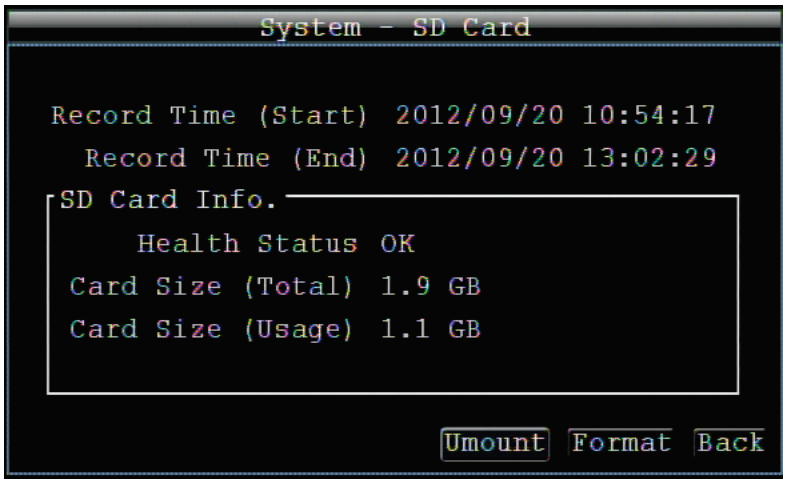
One remote control can be used to operate several DVRs. The DVR to be addressed is selected by pressing the key corresponding to its ID number on the remote control.

Remote Controller ID: ID used by the remote control to select this DVR.

Click Back button to return to the previous level of menu.

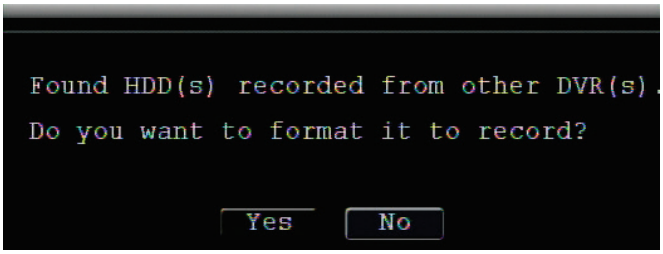
5.7.3 SD Card

This screen is used to view the DVR's storage settings and status. No values in this screen can be changed by the operator.



System – SD Card

NOTE: *You may be prompted to format the SD card when first inserting the SD card to the SD card slot on the front-panel of the mobile DVR.* To format the SD Card, insert the SD card to the SD card slot on the mobile DVR, the following message appears. Click "Yes" to format the SD card.



Record Time (Start): Shows earliest recorded time on the DVR.

Record Time (End): Shows latest or most current recorded time on the DVR.

SD Card Info:

Health Status: If it shows "OK", it means the SD card has been inserted.

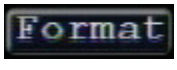
If it shows "Not Install", it means no card has been detected.

Card Size (Total): Shows total file size of the SD card.

Card Size (Usage): Shows percentage of used storage space for the selected SD card.

Unmount: Click the

button to remove the SD Card. Please refer to the steps below.

Format: Click the 

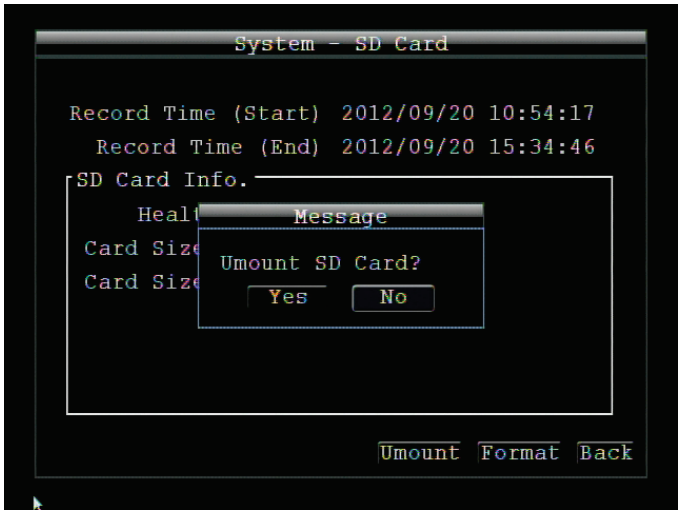
button to format the whole SD Card. WARNING: This will effectively ERASE the ENTIRE card!!

Back: Click

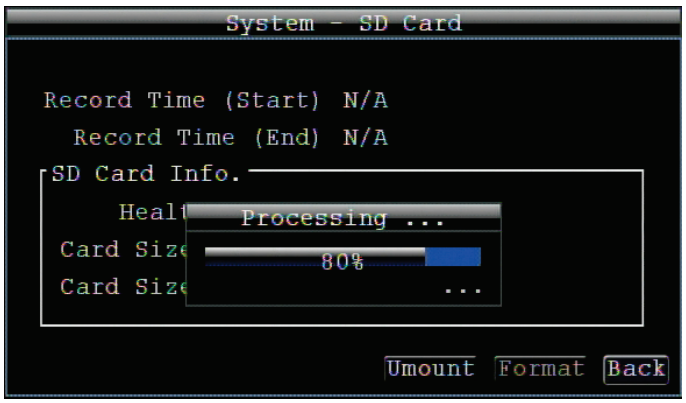
button to return to the previous level of menu.

To remove the SD Card, please see the following steps:

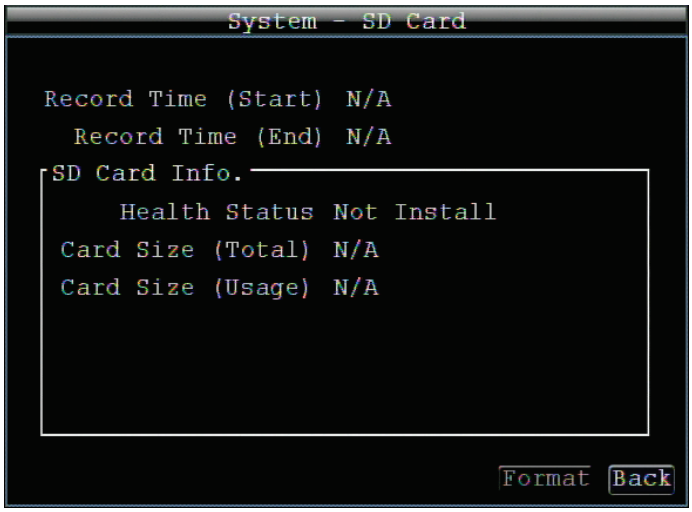
1. Click “Unmount” button, the message of “*Unmount SD Card?*” appears.



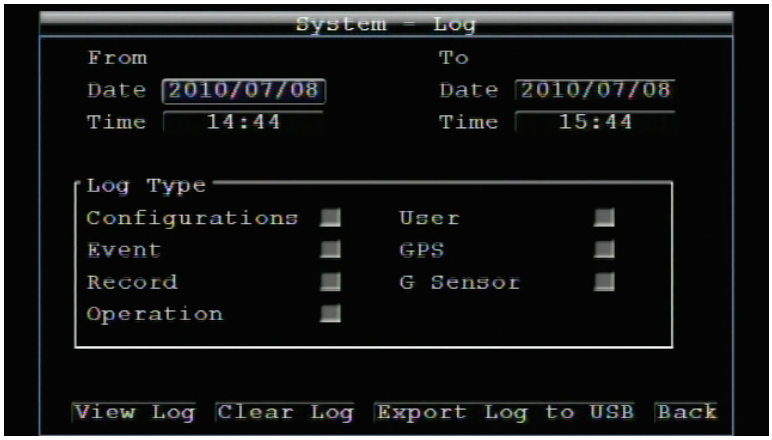
2. Click “Yes”, and the process of removing the SD card begins.



3. After the process is done, the status of the SD card will display N/A. And then you may remove the SD card.



5.7.4 Log



This screen is used to choose, display and/or export log entries.

From:

Date: Select starting date of log to be displayed.

Time: Select starting time of log to be displayed.

To:

Date: Select end date of log to be displayed.

Time: Select end time of log to be displayed.

Log Type:

Configurations: to see log entries related to configuration changes.

Event: to see log entries related to events.

Record: to see log entries related to recording changes.

Operation: to see log entries related to operation changes.

User: to see log entries related to user access.

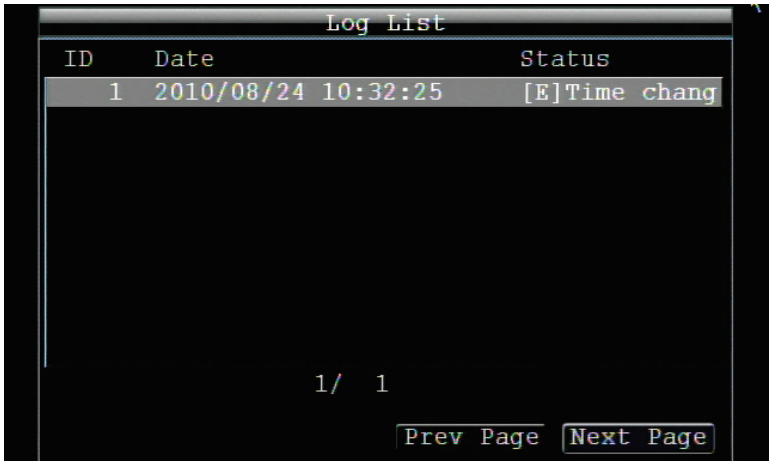
GPS: to see log entries related to GPS changes.

G Sensor: to see log entries related to G Sensor changes.

View Log: Press View Log button to view the Log List (see the image below).

Clear Log: Press Clear Log button to clear the log.

Export Log to USB: Press Export Log to USB button to export log data to USB.



Click the View Log button on the Log menu to see the Log List.

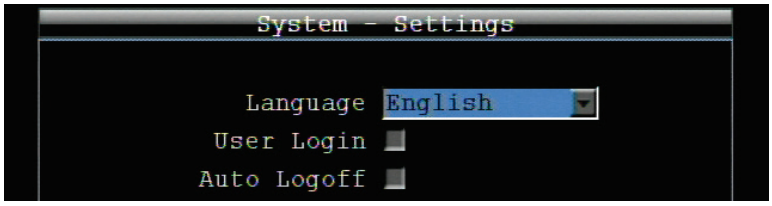
Prev Page: Go to the previous page of the log.

Next Page: Go to the next page of the log.

Close: Close the window.

Click Back button to return to the previous level of menu.

5.7.5 Settings (Login & Language)



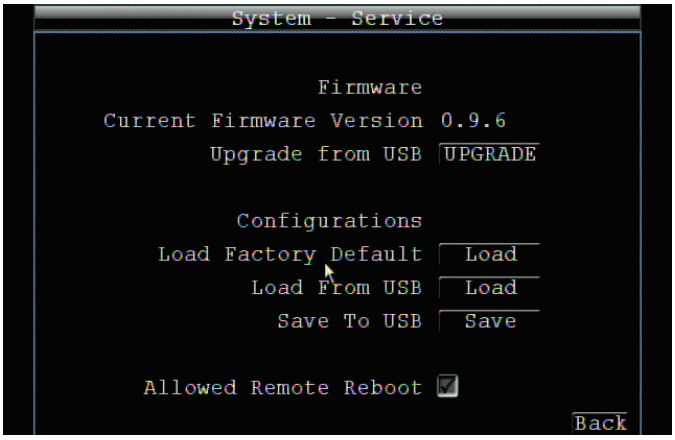
Language: Choose which language the DVR uses. The available languages may vary based on region.

User Login: Check this box to require user login for menu access from the front panel. When this is disabled, no username or password is required to access the system from the front panel, and all users operate with ADMIN rights from the front panel.

Auto Logoff: Check this box to automatically logoff the current front panel user after 3 minutes of inactivity.

Click Back button to return to the previous menu level.

5.7.6 Service (Firmware Upgrade, Defaults, etc.)



The System – Service menu

Firmware

Current Firmware Version: Displays the current version.

Upgrade from USB: Press "Upgrade" to upgrade the firmware.

> ***NOTE:*** *To perform a Firmware Upgrade, you will need to connect a USB storage device with the desired firmware on it.* ***Do not disconnect the USB device or turn off the unit during the upgrade;*** *this can cause the system to fail to recover,* ***requiring factory service to repair.***

Configurations

Load Factory Default: Click "Load" to restore all menu settings to the default values. User Account, Network IP Settings, and Time are not affected.

Load From USB: Click "Load" to upload saved DVR configuration settings from a USB flash device.

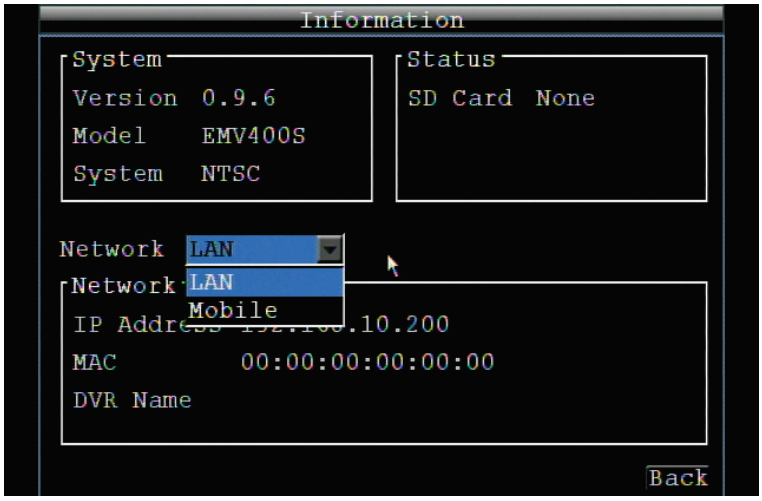
Save To USB: Click "'Save" to save the current DVR configuration settings to a USB flash device.

Allow Remote Reboot: Click this if you want to enable rebooting from a remote location.

Click the Back button to return to the previous level of menu.

5.7.7 Information

This menu displays important (read only) system information.



Information

System

Version: Displays firmware version number.

Model: Displays DVR model number.

System: (NTSC or PAL) Displays current video format – based on the video format of Camera 1 during boot up.

Status

SD Card: Displays whether an SD Card is inserted or not. If a card is inserted, normal status is indicated by "OK".

Network (Select network type – LAN or Mobile)

IP Address: Displays the DVR's current IP Address as set in the Network or Express Setup screen.

MAC: Unique address of the DVR's internal network card. This option cannot be changed.

DVR Name: Displays DVR DDNS name if configured.

Click Back button to return to the previous level of menu.

Chapter

6

6 NETWORKING OVERVIEW

This chapter will give you a basic instruction on how to set up the DVR for network connection. It is highly recommended that you have a working knowledge of what a network is and how it works. This will be helpful in completing the networking process.

6.1 INTRODUCTION TO TCP/IP

TCP/IP is the group of protocols used by the Internet and most Local Area Networks (LANs) throughout the world. In TCP/IP, every computer or other communications device that is connected to the network has a unique IP address. By doing this you are giving your device a unique address similar to the address of your house. An IP address is composed of four octets (numbers in the range of 0 to 255) separated by decimal points. The IP address is used to uniquely identify a host or computer on the LAN. For example, one computer on a network could have an IP address of 192.168.1.127.

You should never give two or more devices the same exact IP address, but the first three octets of an IP address is often the same for all computers in the local area network. For example, if a total of 253 computers exist in a single LAN, the IP addresses could be assigned starting with 192.168.1.*x*, where *x* represents a number in the range of 2 to 254. In IPP address could be compared with a telephone number.

6.2 SUBNET MASKS

Each host in a LAN has a subnet mask. The *subnet mask* is a set of octets that is used to determine which LAN or class it belongs to. The number 255 is usually used to represent the network address portion of the IP address and a zero is placed at the end to identify the host portion of the address. Basically the subnet mask tells the devices how the network addresses are organized, and helps to determine which addresses are local and which are remote (on the other side of the router).

6.3 GATEWAY ADDRESS

Addressees are either local or remote. A *gateway address* is composed of four octets separated by decimal points. The gateway address is used to uniquely identify the device on the LAN that has access to the communications links connecting to other LANs, WANs and/or the Internet (access to the ‘remote’ addresses).

6.4 VIRTUAL PORTS

A **port number** represents a "channel" or entryway for network communications. Port numbers allow different computers to utilize network resources without interfering with each other. Port numbers most commonly appear

in network programming, particularly socket programming. Sometimes, though, port numbers are made visible to the casual user. For example, some websites on the Internet use a URL like the following:

http://www.sitename.com:8100/

In this example, the number 8100 refers to the port number used by the browser to connect to the web server. The standard port number used by web sites is 80, so this number does not need to be included with the URL (although it can be). In IP networking, port numbers can theoretically range from 0 to 65535. Most popular network applications, though, use port numbers at the lower end of the range (such as 80 for HTTP). Ports are similar to doors and windows of your house, with port 80 acting as the front door. If these are not open you could not enter the house. This is the same case with ports on a network. If the ports for a specific IP address are not open then you could not gain access to that IP address.

Note: *The term port also refers to several other aspects of network technology. A port can refer to Ethernet connection points, such as those on a hub, switch, or router. The term port is also used to refer to a physical connection point for peripheral devices such as serial, parallel, and USB ports.*

Another analogy would be: if a WAN IP address is similar to the phone number identify a site, IP ports are similar to telephone extensions, in that they allow communication with specific devices within a site that all share the same external (WAN) IP address. A router is a device which allows multiple computers and other IP enabled equipment to share that single WAN IP address. It functions like a "switchboard operator" – opening ports creates an association between those port numbers and the LAN IP address of specific equipment on the LAN behind the router. When the router sees a 'call' for a specific 'extension' (port), it directs that data stream to the (LAN IP address of the) equipment associated with that 'extension' (port).

6.5 PRE-INSTALLATION

Before beginning the installation, please answer the following questions:

Do you have Hi-speed Internet? _____

There are many types of high speed Internet available. The most common ones are T1, Cable, and DSL (in order of speed). This DVR is not compatible with a dial-up connection.

- **Note:** *EverFocus suggests having a minimum upload speed of 256Kbps. This can be addressed by your Internet Service Provider.*

What type of modem/router do you have? _____

Modem/router model name/ #

The modem/router was either installed by your Internet service provider or purchased by you to establish a connection to the Internet. A router assigns different internal IP addresses to local computers; this allows multiple computers to access the Internet through the same external IP address.

Do you have a static IP address? _____

A Static IP address means you use the same IP address every time you connect to the Internet. With a static IP address, other Internet users always know the address of your location and can easily connect

with it. This makes it much simpler to host a website, email server, or other type of server connection. Everfocus suggests using a static IP address. If this is not available, you will need to use a dynamic IP address. This is explained below.

Do you have a dynamic IP address? _____

A Dynamic IP address means your IP address changes each time you connect to the Internet. We recommend asking your Internet service provider for a Static IP address. If this is not a possibility, you may use the DDNS feature of the DVR. DDNS stands for Dynamic Domain Name Server, a service that provides a central database where IP information can be stored and retrieved. It allows those using a dynamic IP address to be registered centrally so users can connect to it by name. See Chapter 7 for details on using EverFocus DDNS.

What type of DVR are you installing? _____

The default ports are
ECOR264: 80
Paragon: 80
ECOR: 80, 1600
EDR/EDVR: 80, 1600, and 37260 – 37263
EMV: 80

If the ports were changed in the Network Setup, use those port numbers.

6.6 WHAT IS YOUR NETWORK SETUP?

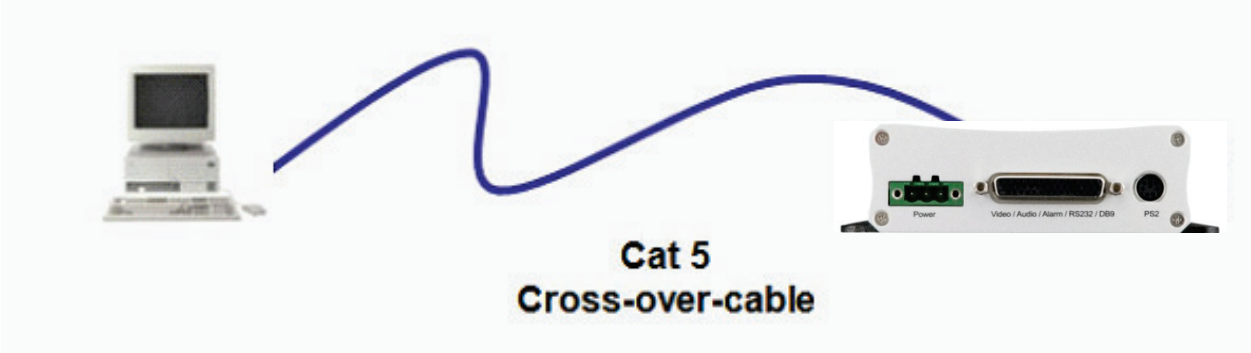
Everfocus DVR's can operate using one of three types of networking connections.

1. Simple One-to-One Connection: A simple one to one connection is the simplest type of network connection. It uses a cross-over cable to make a direct connection from one computer to another (or in this case a computer to a DVR).

2. Direct High Speed Modem Connection: A direct modem connection uses a standard network cable to connect the modem directly to a computer (or in this case a modem to the DVR). This type of connection only covers single-port modems. For a combination modem/router, use the setup described below.

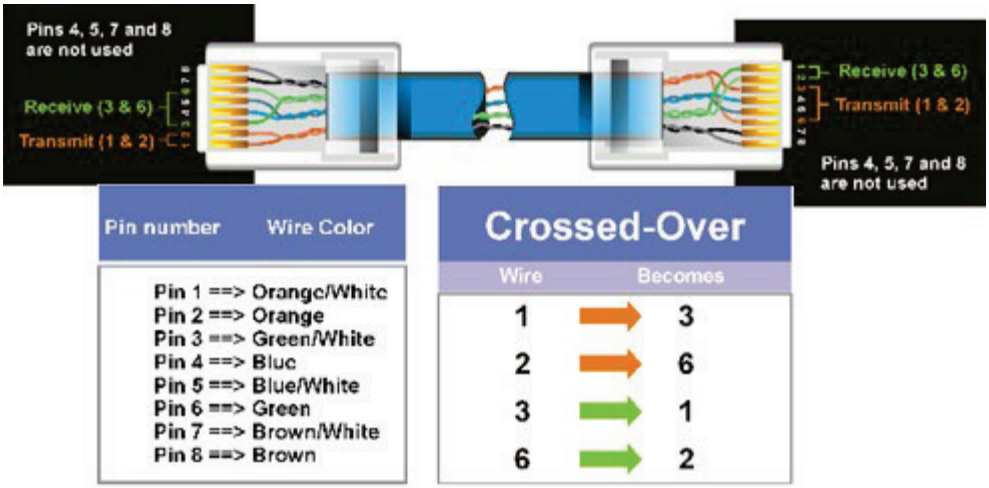
3. Router or LAN Connection – A local area network connection requires either a router or a pre-existing LAN connection. This is the most common type of connection. A router allows multiple computers and DVR's to access each other as well as the Internet. It assigns different internal IP addresses to the computers.

6.7 SIMPLE ONE-TO-ONE CONNECTION



Crossover Ethernet Cable Pinouts:

The Figure below shows the pin configurations for a cross-over cable.



Connection Procedure:

1. The First step is to purchase or make a cross-over cable. We recommend purchasing one if you have never made a cross-over cable. Please remember you can not use a straight through network cable for this application

2. Once you have a cross-over cable plug one end into the LAN port on the back of the DVR and the other into the network card on the back of the computer.

3. Log into the EverFocus DVR menu and go to the Network Setting Menu.

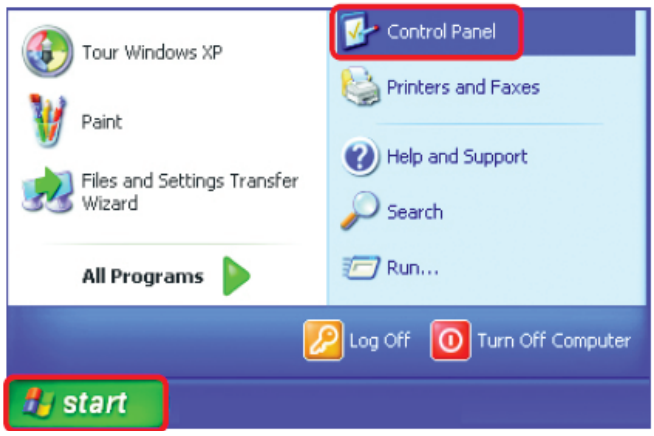
4. You must use the Static IP option for this type of connection.

5. Assign an IP of 192.168.001.003, a Subnet Mask of 255.255.255.000, and a Gateway of 192.168.001.001. You can ignore DNS Server.

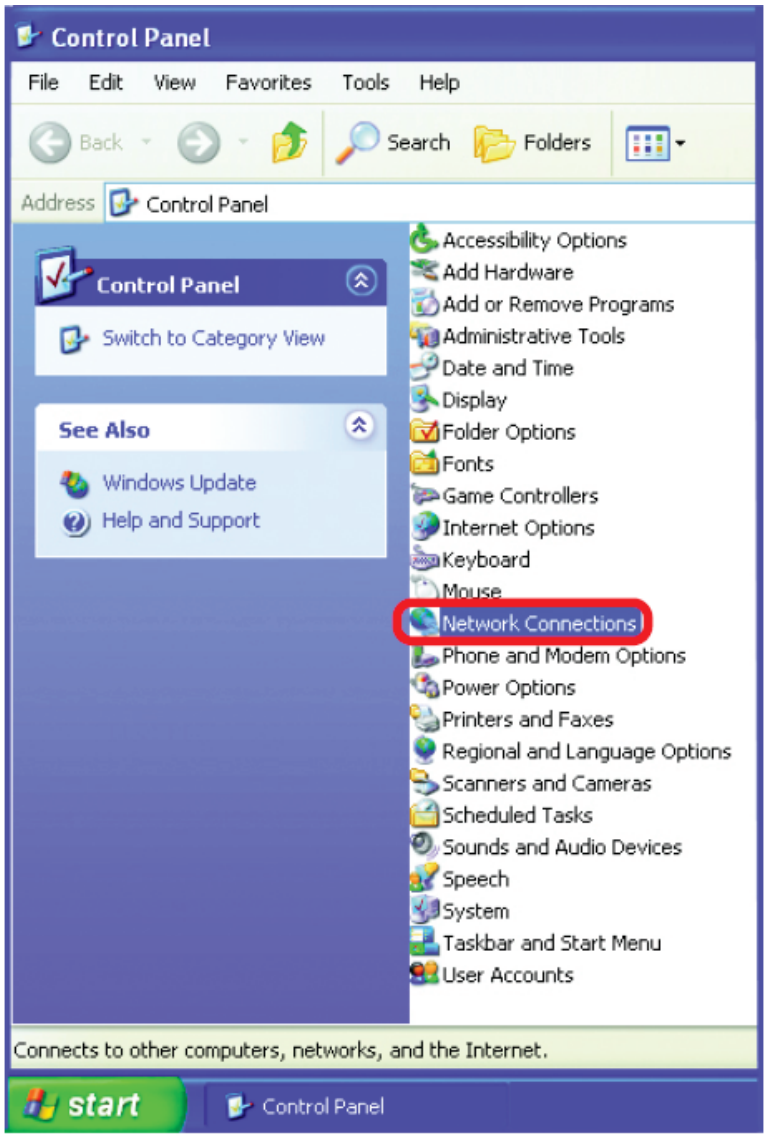
6. The next step is to set the computer's network settings to match those of the DVR. You will need Administrator privileges on your Windows machine to do this.

7. Follow the instructions below to assign a fixed IP address in Windows 2000/XP.

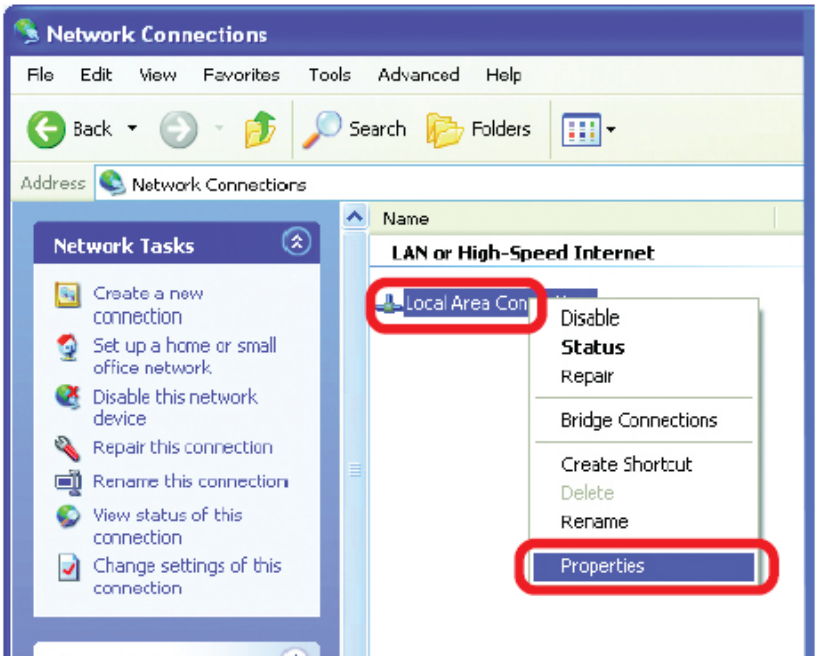
- Go to **Start**
- Double-click on **Control Panel**



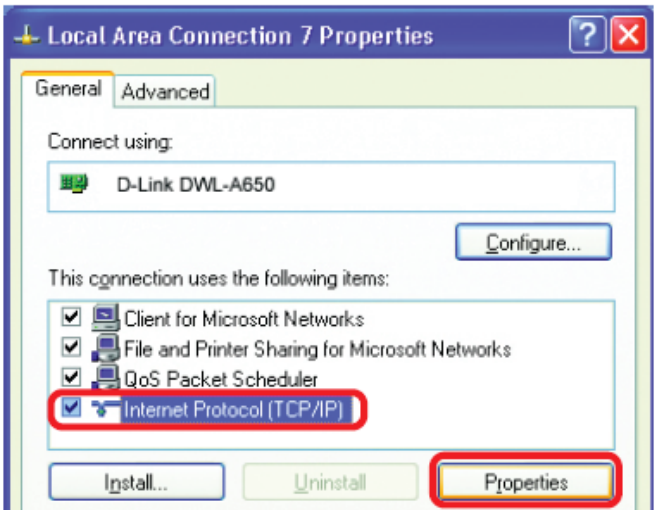
- Double-click on **Network Connections**



- Right-click on **Local Area Connections**
- Double-click on **Properties**



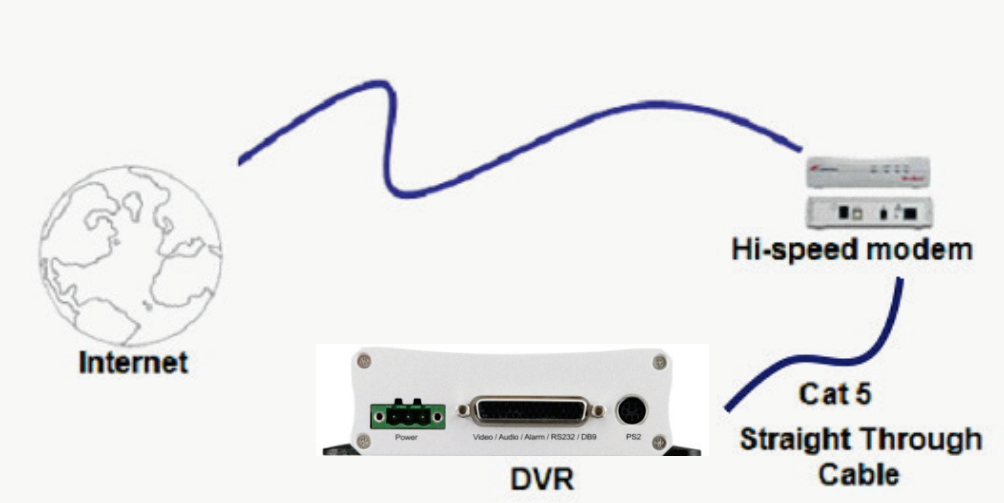
- Click on **Internet Protocol (TCP/IP)**
- Click **Properties**



8. Click on the option that says “Use the following IP address”
9. Assign an IP address of 192.168.1.2, a Subnet Mask of 255.255.255.0, and a Default Gateway of 192.168.1.1, then click OK.
10. Restart both the computer and the DVR.
11. To access the DVR from the computer, simply open Internet Explorer and in the address bar type:

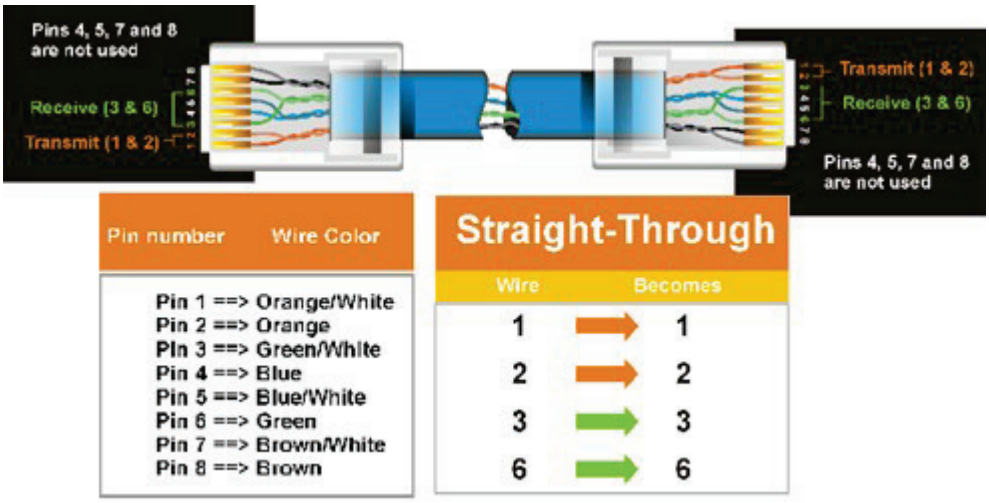
    http://192.168.1.3

6.8 DIRECT HIGH-SPEED MODEM CONNECTION



Straight-Through Ethernet Cable Pinouts:

The Figure below shows the pin configurations for a straight cable.



Connection Procedure:

1. The first step is to purchase or make a straight through cable. We recommend purchasing one if you have never made a straight through cable. Please remember you can not use a cross-over network cable for this application

2. Once you have a straight through cable plug one end into the LAN port on the back of the recorder and the other into the high speed modem.

3. Log into the EverFocus DVR menu and go to the Network Setting Menu.

4. Input the Static IP address, the Subnet Mask, and the Gateway that you obtained from the internet service provider.

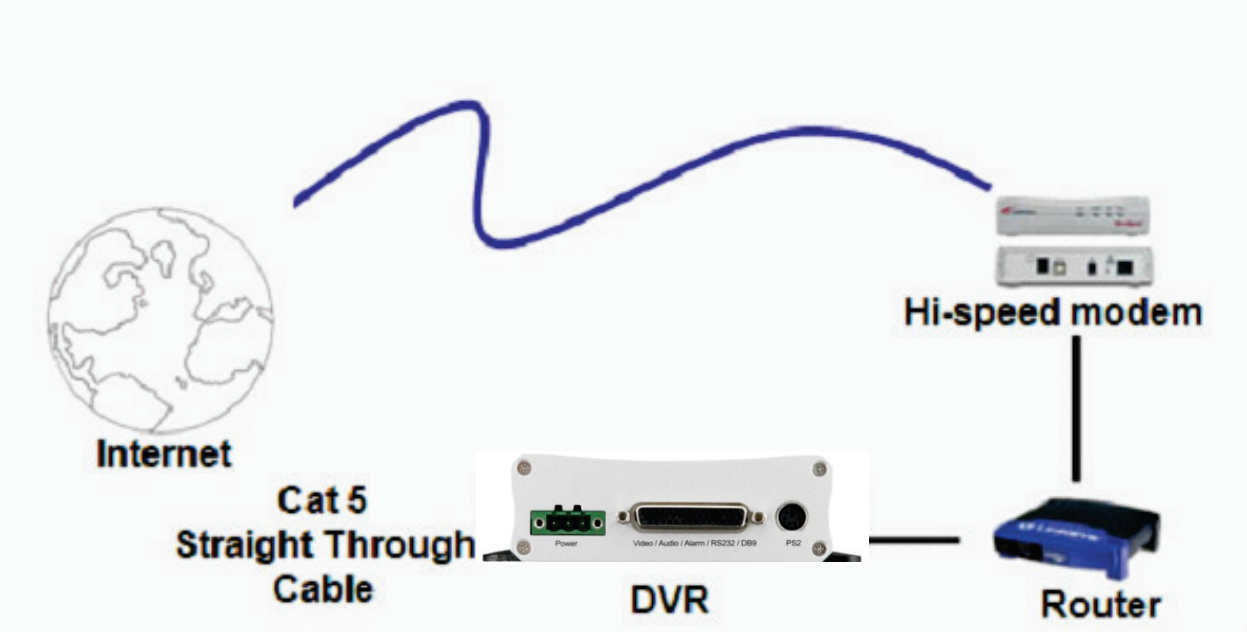
- ***Note:*** *If you have a dynamic IP address, you can set the DVR to DHCP to automatically detect the network settings. Therefore, it can use a dynamic IP address.*

5. Exit from the DVR's Menu to save the settings.

6. To access the DVR from a computer, open Internet Explorer and in the address bar type:
   a. http:// (IP address given by your internet service provider)

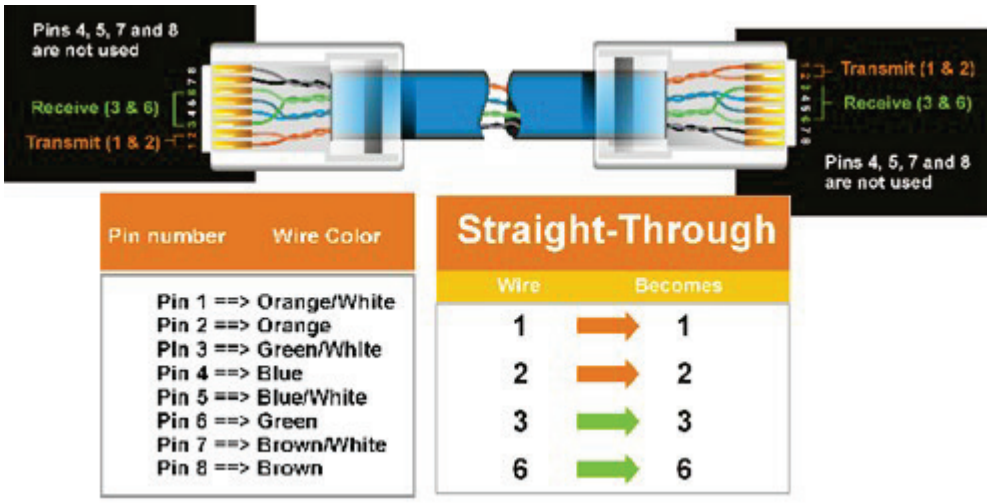
- ***Note:*** *When using this type of connection, only one device can be connected to the modem at a time. You will need to use a computer at a different location to test the connection.*

6.9 ROUTER OR LAN CONNECTION



Straight-Through Ethernet Cable Pinouts:

The Figure below shows the pin configurations for a straight cable.



Connection Procedure:

1. The First step is to purchase or make a straight through cable. We recommend purchasing one if you have never made a straight through cable. Please remember you can not use a cross-over network cable for this application

2. Once you have a straight through cable plug one end into the LAN port on the back of the recorder and the other into the router.

3. Log into the EverFocus DVR menu and go to the Network Setting Menu.

4. To let the router automatically assign an address:

- Set the Network Type to DHCP. Make sure to write down the IP address and the Gateway.

- Exit from the Menu to save settings.

To manually assign an address:

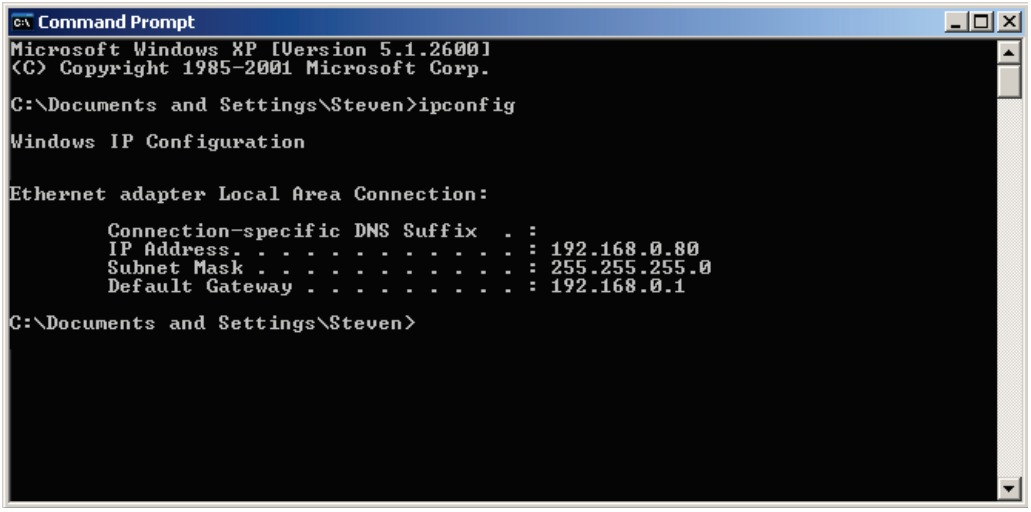
- Go to a computer connected on the same network as the DVR.

- Click on the Start button and choose Run.
  - If using Windows Vista, choose Search instead.

- Type “command” and click on OK.
  - In Vista, you will need to double-click on the “Command Prompt” file to open it..

- In the DOS prompt, type “ipconfig” and press Enter.

- The network information will be displayed on a screen similar to the one below.
  - In Windows Vista, look for the information that says “IP v4”.



- Take the values for Subnet Mask and Default Gateway and input them into the DVR; these values should be exactly the same in both devices. However, you should change the last number of the IP address. For example, if the IP address of the computer is 192.168.2.101, the DVR's IP address should be 192.168.002.050.

5. To access the DVR from a computer simply open Internet Explorer and in the address bar type:
   http:// (IP address of the DVR)

   - **Note:** *The DVR's IP address will only work at the location of the DVR. To connect from a different location over the Internet, see below.*

To set DVR for Internet Connection through router

6. The next step is to open ports within your router. Log into the router using a PC and open the following ports.

   - Ports to open: 80
   - If your Internet service provider blocks port 80, you can change it to a different port in the DVR's Network Menu Setup; open/forward that port instead.
   - If you are using a Linksys or D-Link router, see Chapter 8 for basic support on setting up ports. For any other router, you will need to contact the manufacturer for support.

7. To access the DVR from a computer simply open Internet Explorer and in the address bar type:
   http:// (the IP address given by your internet service provider)

   - **Note:** *If you changed to a different port other than 80, you will need to include this at the end of the IP address*

   http:// (the IP address given by your internet service provider): portnumber

8. If you have a WAN Dynamic IP address and have opened the ports, go to Chapter 7 to setup DDNS.

Chapter

7

7 REMOTE OPERATION FROM BROWSER

7.1 CONNECTING TO THE EMV200S/EMV400S

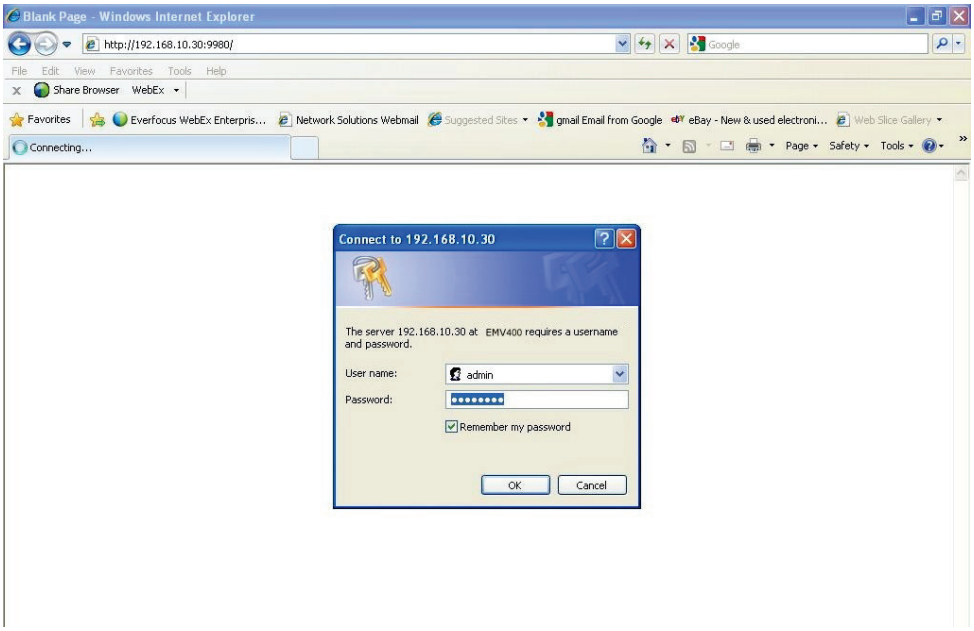
To access the DVR from a computer, open an Internet Explorer window and in the address bar type:

"Local connection" + *":"* + "*IP port used"*
Example: "*http:// (IP address from the DVR's Network Menu)"* + *":"* + "*2468"*
Example: *http://192.168.1.163:2468*

OR
"Internet connection" + *":"* + "*IP port used"*

Example: "*http:// (IP address given by your Internet Service Provider)"* + *":"* + *"2468"*
Example: "*http://57.182.67.204:2468"*

You should then see a login prompt:



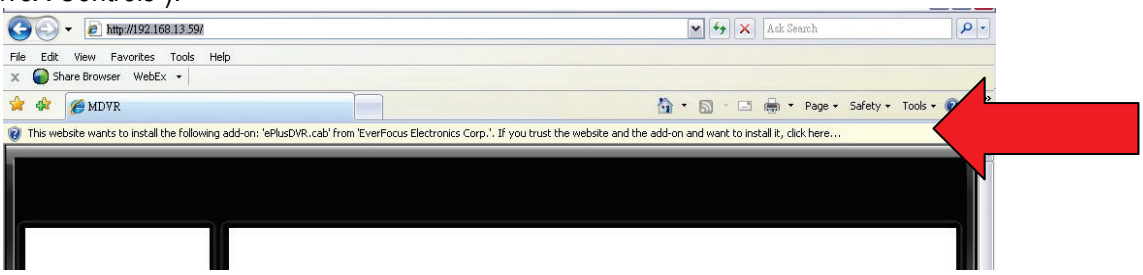
Enter a user name and password to access the DVR's GUI. These can be changed in the System section of the Main Menu.

The default user name is "admin". The default password is "11111111".
Click on the Login button to enter the DVR's Network Viewer (GUI).

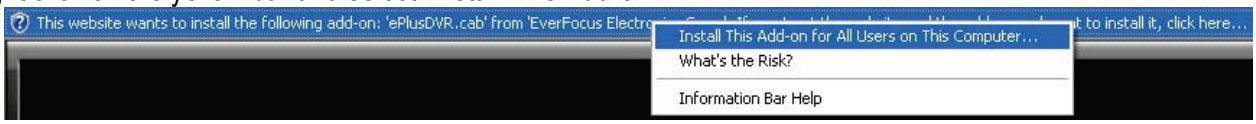
7.2 BROWSER SECURITY SETTING

7.2.1 Installing ActiveX controls

When you first connect to the DVR's IP address, you should see a screen like the one below. If you do not see a yellow bar like the one the arrow is pointing at, your security settings may be too high. If so, go to Section 7.2.2 ("Enabling ActiveX Controls").

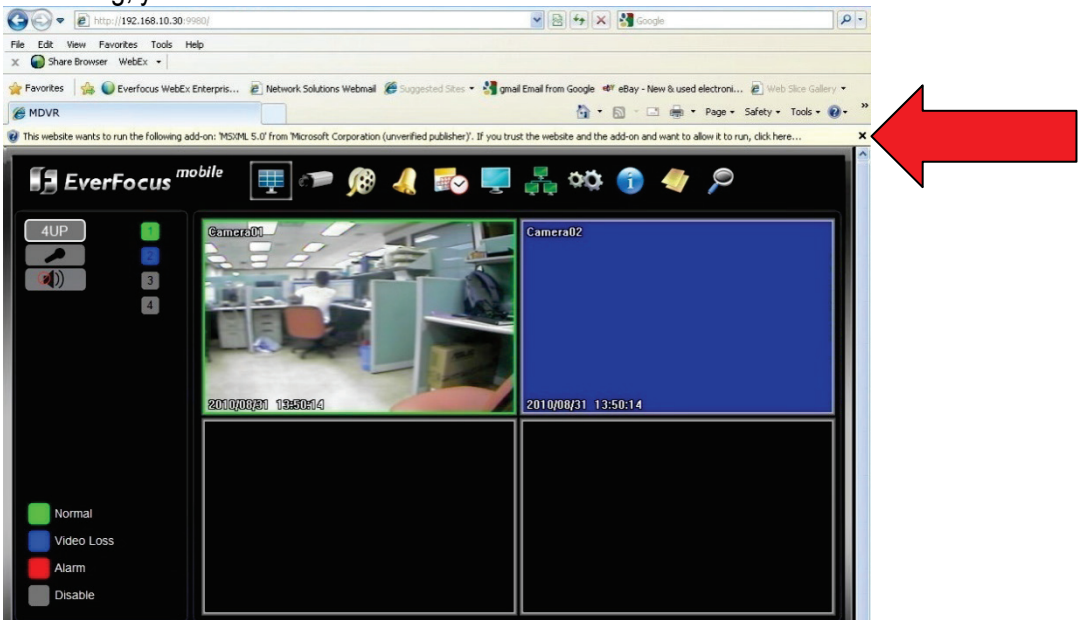


Right click on the yellow bar and select "Install This Add-on…"

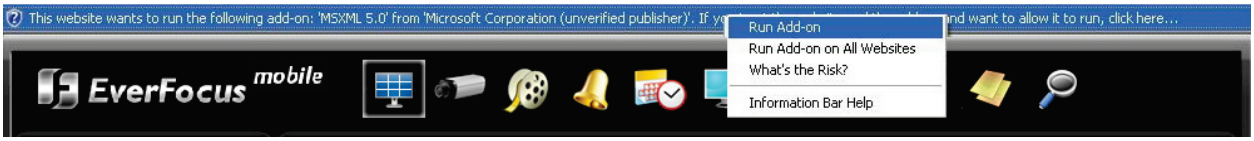


Install the ePlusDVR.cab file when prompted to do so.

Once the file finishes installing, you will return to the screen like the one below.

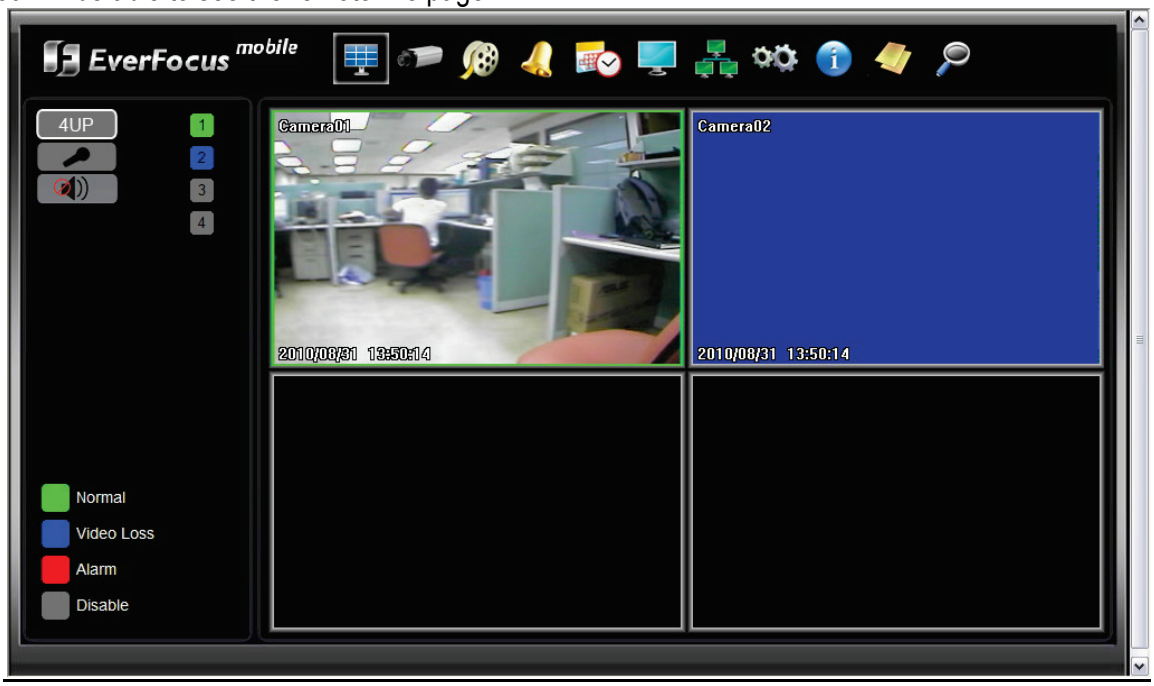


Right-click on the yellow bar and select "Run Add-on…"



Install the MSXML file when prompted to do so.

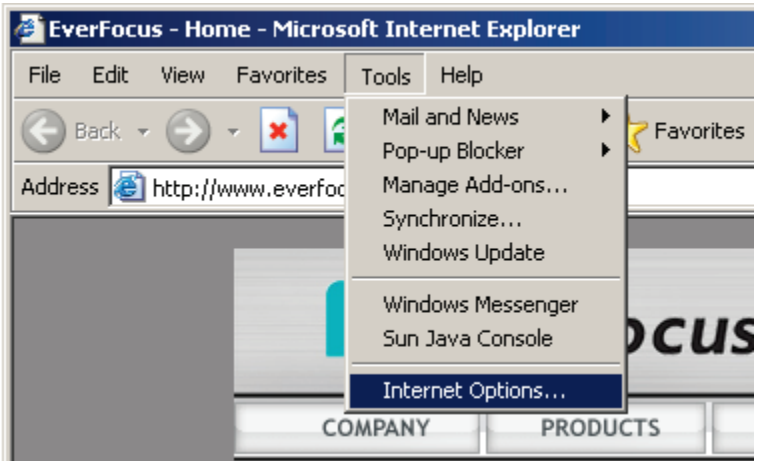
Now, you will be able to see the remote live page.



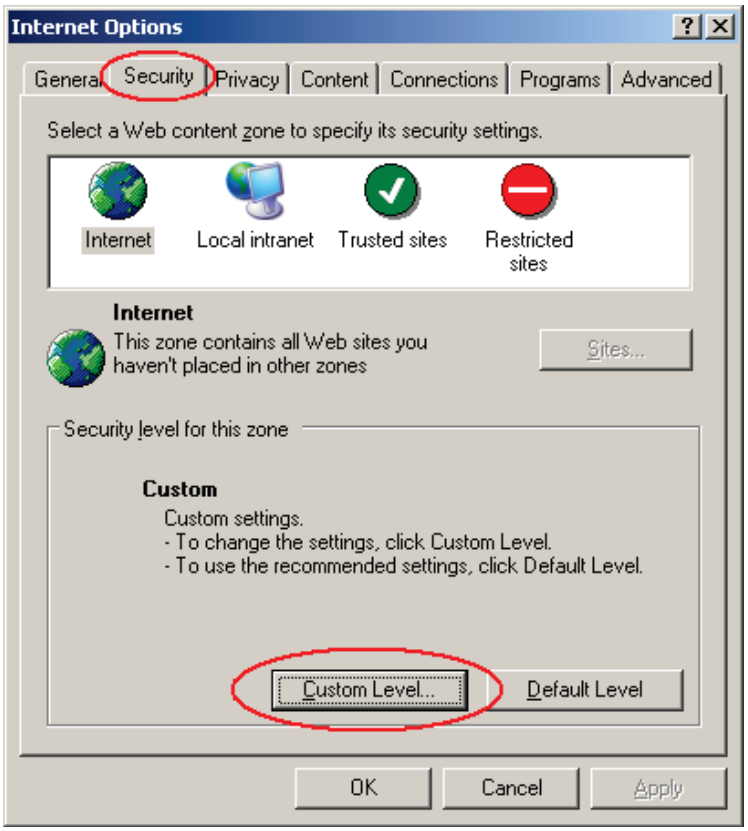
7.2.2 Enabling ActiveX Controls

Note: *This section is only necessary if you DO NOT see the yellow ActiveX bar at the top of your browser screen when you first connect to the DVR.*

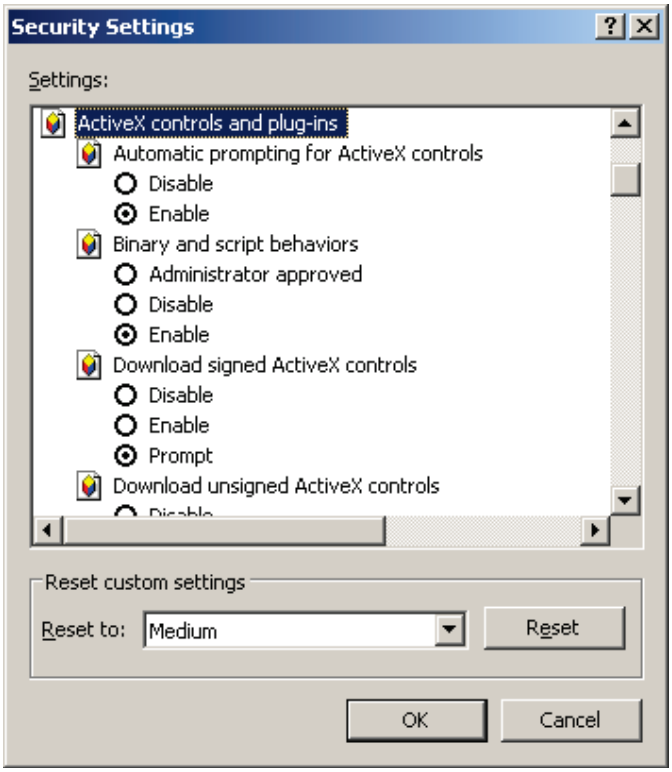
At the top of the Internet Explorer Window, click on Tools, then select Internet Options.



Click the Security tab at the top of the window, then choose Custom Level near the bottom.



In the Security Settings window, scroll to “ActiveX controls and plug-ins”



Set the controls as follows:

“**Enable**”:
- ✓ Allow previously unused ActiveX controls to run without prompt (*Internet Explorer 7 only*)
- ✓ Allow scriptlets (*IE7 only*)
- ✓ Automatic prompting for ActiveX controls
- ✓ Binary and script behaviors
- ✓ Display video and animation on a webpage that does not use external media player (*IE7 only*)
- ✓ Run ActiveX controls and plug-ins
- ✓ Script ActiveX controls marked safe for scripting

“**Prompt**”:
- ✓ Download signed ActiveX controls
- ✓ Download unsigned ActiveX controls

“**Disable**”:
- ✓ Initialize and script ActiveX controls not marked as safe

Click OK and then choose Yes to change the security settings.

Close the window so you are back at the login screen.
Click the Refresh button to reload the page.

Install the ePlusDVR.cab file when prompted to do so.

Once the file finishes installing, you will return to the same login page as before.
Type in the user name and password and click Login to view the cameras.
Default user name: admin – Default password: 11111111.

7.3 REMOTE LIVE VIEW

1. Click on a camera number on the left side of the display to switch that camera to full screen. Click on “4UP” to display 4 screens.
2. You can click the “**Mic**” button to transfer audio to DVR from client side if there is a microphone attached to the PC and an amplifier and speaker attached to the DVR. You can also click the “**Speaker**” button to transfer audio to the client side from DVR if there is a speaker on the PC and a microphone and preamp attached to the DVR, and audio recording is enabled on the DVR. Double click on a camera image to enlarge the current display to full screen; double click again to return to the normal view.
3. The status of each camera is represented by different colors on the left side of the screen. Green means normal; orange indicates a Motion alarm; blue indicates Video Loss, red indicates an alarm event and grey means disable
4. **Menu bar:** Menu buttons for setup, search and export, details are explained in following chapters.

Live View

Camera Setup

Record & Play Setup

Alarm/Event Setup

Date/Time Setup

Display Setup

Network Setup

System Setup

Information Setup

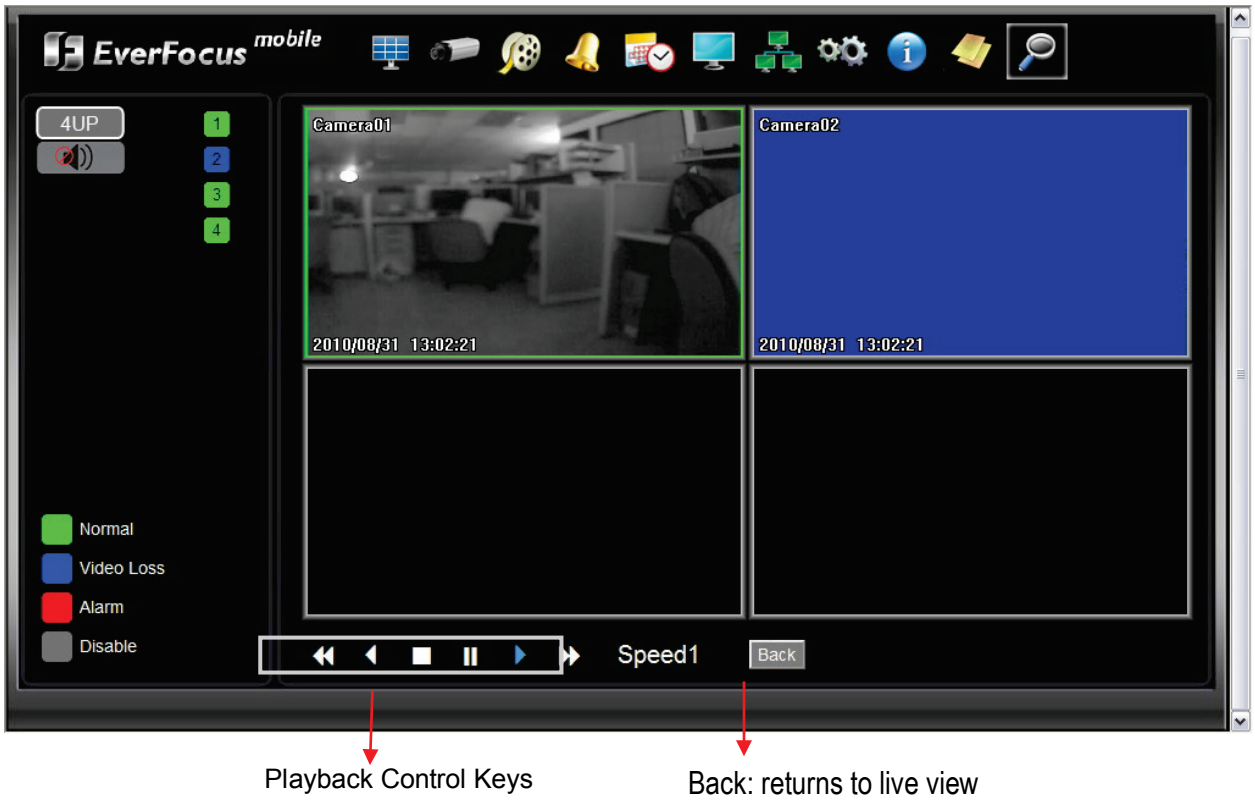
Copy Menu

Search Menu

5. In the main page, you will see live images in a 4-screen display.

7.4 REMOTE PLAYBACK

To playback the video, click the “Search” button. Select from “Time Search”, “G Sensor Search”, “GPS Search” or “Event Search”. For more details about Search setting, please refer to “4.1 Search Setting”.



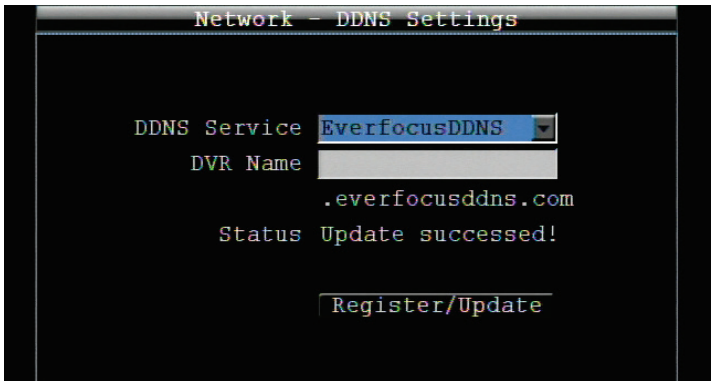
Playback Control Keys:

1. Fast rewind the video.
2. Play Reverse the video.
3. Stop playback.
4. Pause
5. Playback the video.
6. Fast forward the video.

Chapter

8

8 EVERFOCUS DDNS SETUP



Setup Steps:

Step 1. Set up the Network Menu according to the instructions detailed in the Networking chapter. (Make sure that DNS Server 1 is set correctly or DDNS will not work)

Step 2. Go to the website http://everfocusddns.com and check for an available name.

Note: *This step is optional, though recommended, as it is used to check the availability of a host name. If the name is already used, and attempt to register that name must fail. If the name is available, proceed to step 3 for DDNS setup.*

Step 3. In DVR's Network Menu, go to DDNS. Choose "EverfocusDDNS" for the Server and put in your chosen name in the field: DVR Name.

PLEASE NOTE: The name of the DVR **cannot include a space, or a dot** (period) or **any special characters** particularly **~ ! @ # $ % ^ & * ( ) + < > " ; : . , _**

Step 4. Click (or select and press Enter) on the "**Register/Update**" button to synchronize the DVR with the DDNS server. You should see an indication of "Success" on the screen. If you see "Could Not Find Server" or any other error message instead, double-check your network settings and DDNS name and resubmit the DDNS name until you get "Success".

Step 5. You should now be able to connect by typing the name you created into the address bar. Example: http://hostname.everfocusddns.com

It is not necessary to append the HTTP port number to the DDNS name. The EverFocus DDNS server not only keeps track of your DVR's IP address, it keeps track of the ports too!

Chapter

9

9 LINKSYS & D-LINK PORT FORWARDING

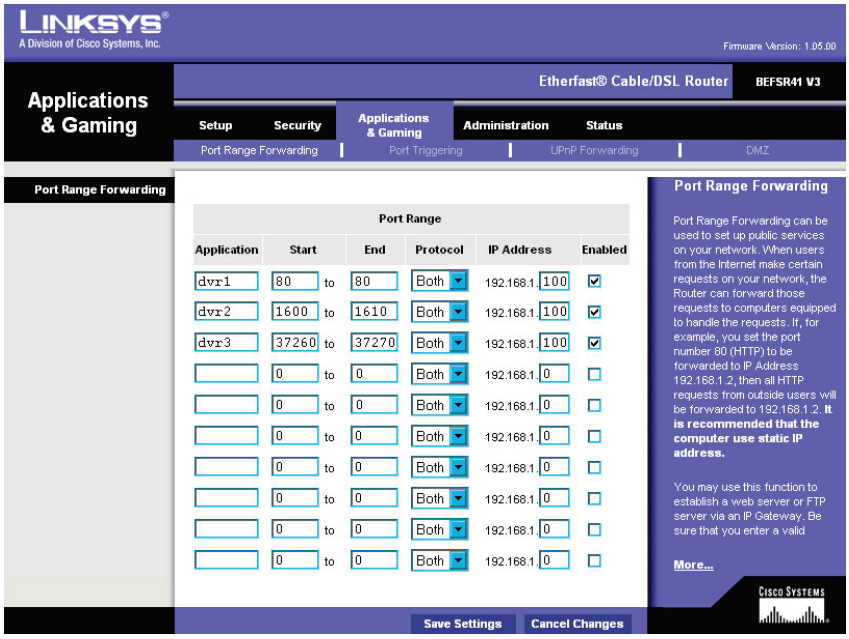
9.1 TYPICAL LINKSYS PORT FORWARDING

This section will cover a few simple configurations for the Linksys router. This chapter is only to offer some help to the installer and end user. Please understand we **DO NOT** support this device and will not give tech support on it. If you need additional technical support on this router you must call Linksys.

To access the Web-based Utility, launch a web browser and type the Router's IP address, typically **192.168.1.1**, in the address bar. Then press **Enter**. A password request page will appear. (Non-Windows XP users will see a similar screen.) Leave the *User Name* field blank. The first time you access the router, use the default password **admin**. Click the **OK** button to continue.

The first screen that appears displays the Setup tab. This allows you to change the Router's general settings. Change these settings as described here and click the **Save Settings** button to apply your changes or **Cancel Changes** to cancel your changes.

Click on the "Applications & Gaming" tab.



Applications and Gaming allows you to set up public services on your network, such as web servers, ftp servers, e-mail servers, or other specialized Internet applications. (Some Internet applications may not require any forwarding) To forward a port, enter the information on each line for the criteria required. Descriptions of each criterion are described here.

Application - In this field, enter the name you wish to give the application.

Start/End - Enter the starting number of the range under **Start** and the ending number under **End**.

Protocol - Enter the protocol used for this application, either **TCP** or **UDP**, or **Both**.

IP Address - For each application, enter the IP Address of the PC running the specific application.

Enable - Click the **Enable** checkbox to enable port forwarding for the relevant application.

When finished making changes, click the **Save Settings** button to apply your changes or **Cancel Changes** to cancel them.

Here is an example for how the port information might look:

HTTP 80 to 80 Both 192.168.1.50 Enable

Where 192.168.1.50 is the IP address of the EMV200S/EMV400S on the LAN, and the default port 80 is in use.

Note: ***If you changed port 80 in the DVR's Network Menu, open that port instead of 80.***

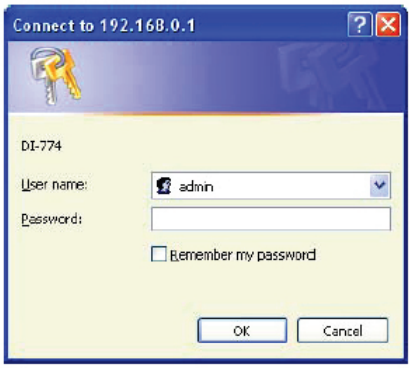
9.2 TYPICAL D-LINK PORT FORWARDING

This section will cover a few simple configurations for the D-Link router. This chapter is only to offer some help to the installer and end user. Please understand we **DO NOT** support this device and will not give tech support on it. If you need additional technical support on this router you must call D-Link.

Whenever you want to configure your network or the DI-624, you can access the Configuration Menu by opening a web-browser and typing in the IP Address of the DI-264.

The DI-264 default IP Address is 192.168.0.1.

- Type “admin” in the **User Name** field
- Leave the **Password** blank
- Click **OK**



The first screen that shows up is the Home Tab. This is the starting point for all the router’s settings and functions.

Click Virtual Servers on the left to bring up the following screen.

Virtual Servers allows users who are connecting remotely to access services on the router's Local Network. The functions of each field are described below.

Virtual Server - Select **Enabled** or **Disabled**

Name - Enter the name referencing the virtual service

Private IP - The IP address of the device running the local services.

Protocol Type - The protocol used for the virtual service.

Private Port – The port number that the service uses on the LAN (Local Area Network).

Public Port - The port number that the services uses on the WAN (Wide Area Network).

Schedule – The time period the virtual server will be active.
When you have input all the information for a virtual server, click on **Apply** to add it to the list at the bottom or **Cancel** to clear all fields.

Here is an example of the information for each service:

Name	Private IP	Protocol	Private Port	Public Port	Schedule
HTTP	192.168.1.50	Both	80	80	Enable

Where 192.168.1.50 is the IP address of the EMV200S/EMV400S on the LAN, and the default port 80 is in use.

Note: ***If you changed port 80 in the DVR's Network Menu, open that port instead of port 80****.*

Chapter
10

10 TROUBLESHOOTING

If you have problems with the system, run through the following checklist to see if you can solve the problem.

- **The DVR will not go into record mode.**
  - Bring up the DVR's Menu and check under the Camera Menu. Verify that all connected cameras are checked as "Installed" and that Record Mode is set to "Continuous".
  - Check the SD Card or Information Menus and verify that the storage is being detected.

- **The DVR displays nothing on the main monitor.**
  - Make sure the monitor is connected to the video out cable. If the monitor has multiple inputs, make sure it is on the correct input source and display setting (1024x768).
  - Check that the monitor cables are good and power is on.
  - Verify the recorder is getting the correct supply power.

- **There is no display coming from one of the channels on the DVR.**
  - In the DVR's Camera Menu, make sure that all cameras are checked as "Installed" and unchecked for "Covert".
  - If there is still no picture, switch ports or connect a working camera to the port that has no picture. If you get an image, the problem is coming from the camera or cable.

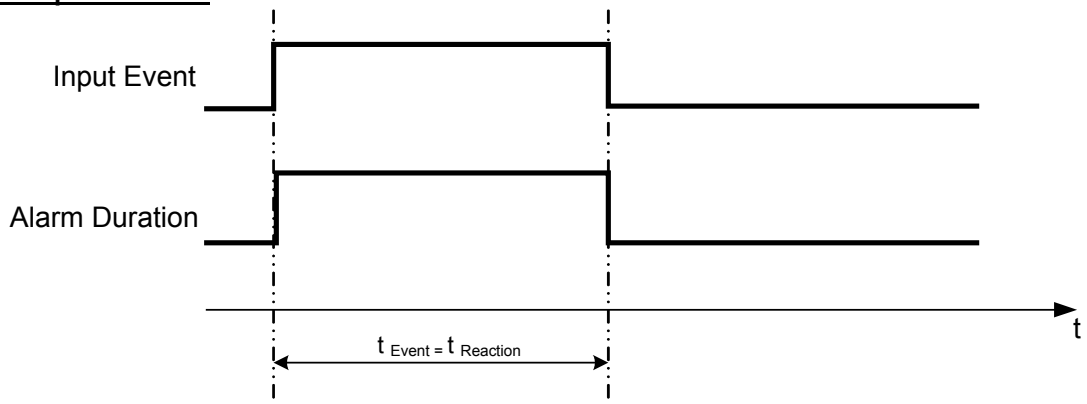
- **I cannot connect to the recorder via the internet.**
  - Check that you can connect to the DVR on the LAN.
  - Check that the DVR has a static IP address and the port used by the DVR is forwarded correctly to that IP address in the router.
  - Verify that your Internet Service Provider does not block the IP port being used
  - Make sure you are using the correct WAN IP address given by the ISP, or, if you have a Dynamic IP, check if the IP address has changed; use DDNS to avoid problems caused by changing ISP addresses.

Appendix

A

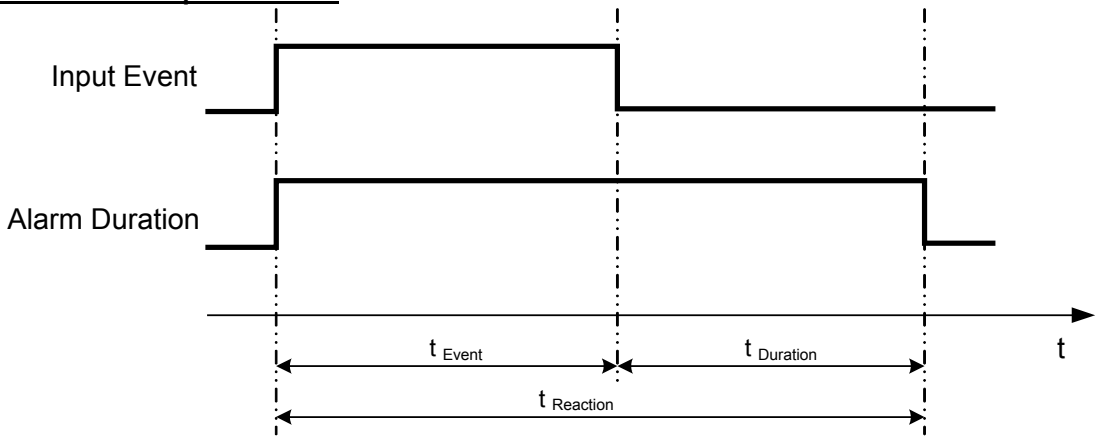
APPENDIX A: TIMING OF ALARM MODES

Transparent Mode



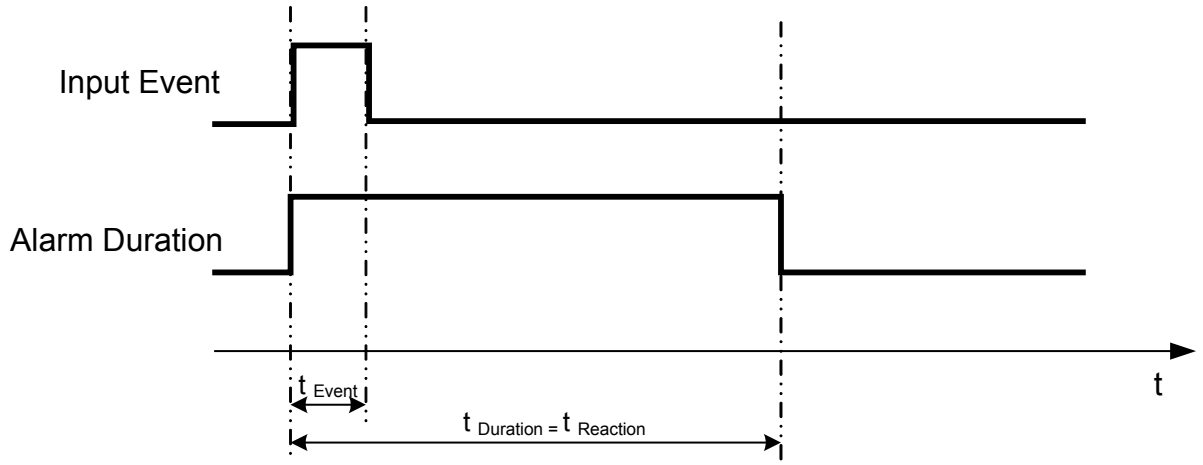
t Event: Duration of alarm input source (motion, contact, system events...)
t reaction: Resulting duration for this alarm mode, related to event record, alarm outputs, OSD message, buzzer

Timeout + Transparent Mode



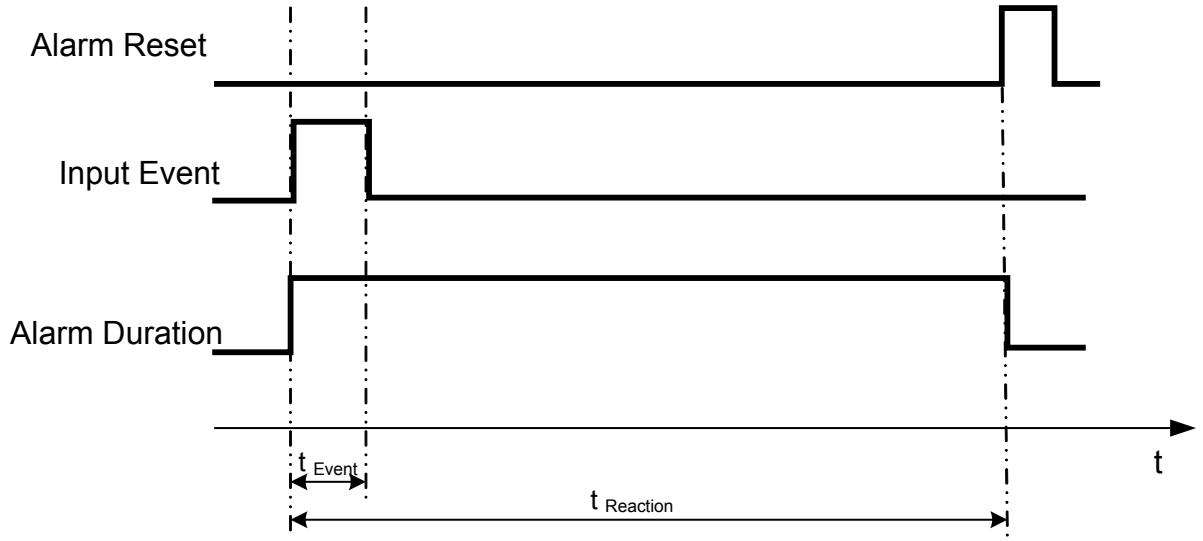
t Event: Duration of alarm input source (motion, contact, system events...)
t Duration: Alarm duration for timeout, defined in the event setup menus
t reaction: Resulting duration for this alarm mode, related to event record, alarm outputs, OSD message, buzzer

Timeout Mode



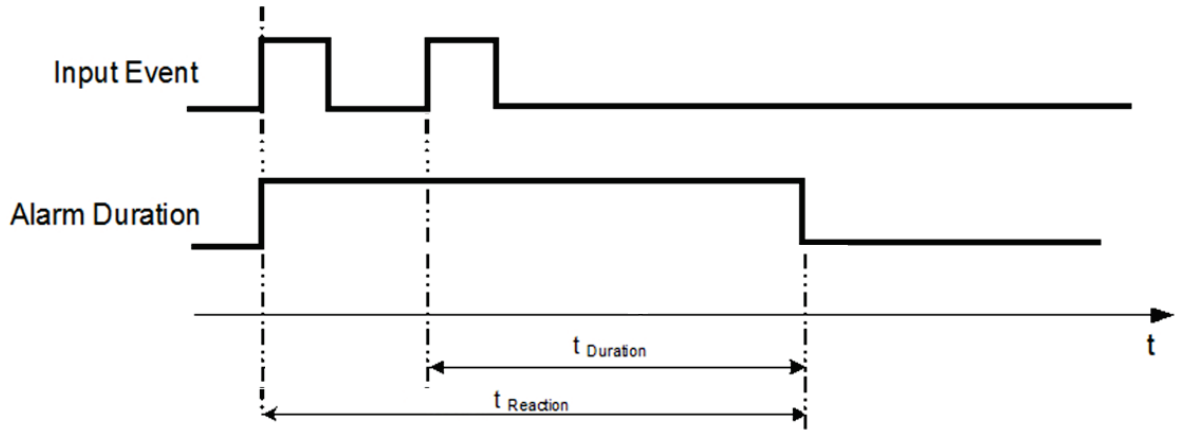
t Event: Duration of alarm input source (motion, contact, system events...)
t Duration: Alarm duration for timeout, defined in the event setup menus
t reaction: Resulting duration for this alarm mode, related to event record, alarm outputs, OSD message, buzzer

Permanent Mode



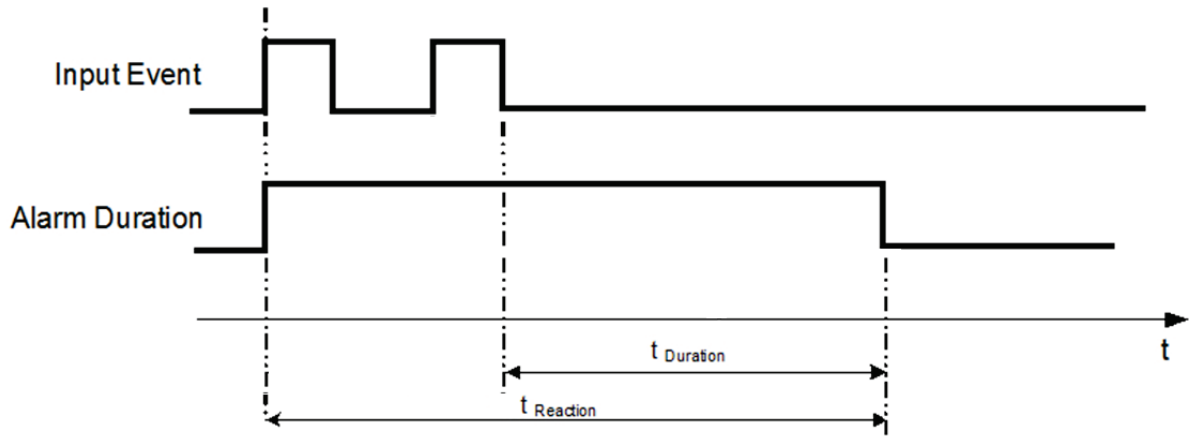
t Event: Duration of alarm input source (motion, contact, system events...)
t Duration: Alarm duration for timeout, defined in the event setup menus
t reaction: Resulting duration for this alarm mode, related to event record, alarm outputs, OSD message, buzzer

Timeout Mode: Retrigger of Alarms



t_{Event}: Duration of alarm input source (motion, contact, system events...)
$t_{Duration}$: Alarm duration for timeout, defined in the event setup menus
$t_{reaction}$: Resulting duration for this alarm mode, related to event record, alarm outputs, OSD message, buzzer

Timeout+Transparent Mode: Retrigger of Alarms



t_{Event}: Duration of alarm input source (motion, contact, system events...)
$t_{Duration}$: Alarm duration for timeout, defined in the event setup menus
$t_{reaction}$: Resulting duration for this alarm mode, related to event record, alarm outputs, OSD message, buzzer

Appendix

B

APPENDIX B: EXPRESS SETUP OF RECORDING VALUE SELECTION RULES

Case 1:
Record Mode: Normal + Event Record With: Recording days

The DVR will Auto adjust image Quality and Event frame rate to match the number of Recording days which user selected:
According to resolution, event hours and other assumptions above, the DVR will attempt to select one set of suitable quality and event frame rate by checking if set 1 meets the requirements, and proceed in order unit the requirements are met. If the DVR can't match the required record days from one of the 8 sets, it will use set 8.

Checking Order	1	2	3	4	5	6	7	8
Normal Frame Rate	1	1	1	1	1	1	1	1
Quality	Superior	Standard	Low	Low	Low	Low	Low	Low
Event Frame Rate	30	30	30	15	10	7.5	5	1

Case 2:
Record Mode: Event Only Record With: Recording days
DVR will Auto adjust Quality and Event frame rate to match the Recording days which user need:
According to resolution, event hours and other assumptions above, the DVR will attempt to select one set of suitable quality and event frame rate by checking if set 1 meets the requirements, and proceed in order unit the requirements are met. If the DVR can't match the required record days from one of the 8 sets, it will use set 8.

Checking Order	1	2	3	4	5	6	7	8
Quality	Superior	Standard	Low	Low	Low	Low	Low	Low
Event Frame Rate	30	30	30	15	10	7.5	5	1

Case 3:
Record Mode: Normal + Event or Event Only
Record With: Preset Setting

DVR will apply the settings in the table below to all cameras according to the Preset Settings.

Preset Setting Option	Camera Item	Apply value
Best Quality	Quality	Superior
	Normal Frame Rate	Max recording frame rate of DVR
	Event Frame Rate	30
Standard Quality	Quality	Standard
	Normal Frame Rate	Half of max recording frame rate of DVR
	Event Frame Rate	30
Extended Quality	Quality	Basic
	Normal Frame Rate	1
	Event Frame Rate	10

Appendix

C

APPENDIX C: REMOTE CONTROL

The IR remote control is an accessory to enhance the convenient operation of the DVR. You can perform all the settings and operations from the remote control. The effective distance is up to 33 feet (10m) line of sight. The keypad functions are the same as the front panel buttons of the DVR.

ID number here must correspond to the "IR Remote ID" in "I/O Control Setup Menu". Used to select a DVR when there is more than one unit. Selecting an incorrect unit ID will prevent the DVR from responding to commands from the remote.

Channel keys #1~4

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